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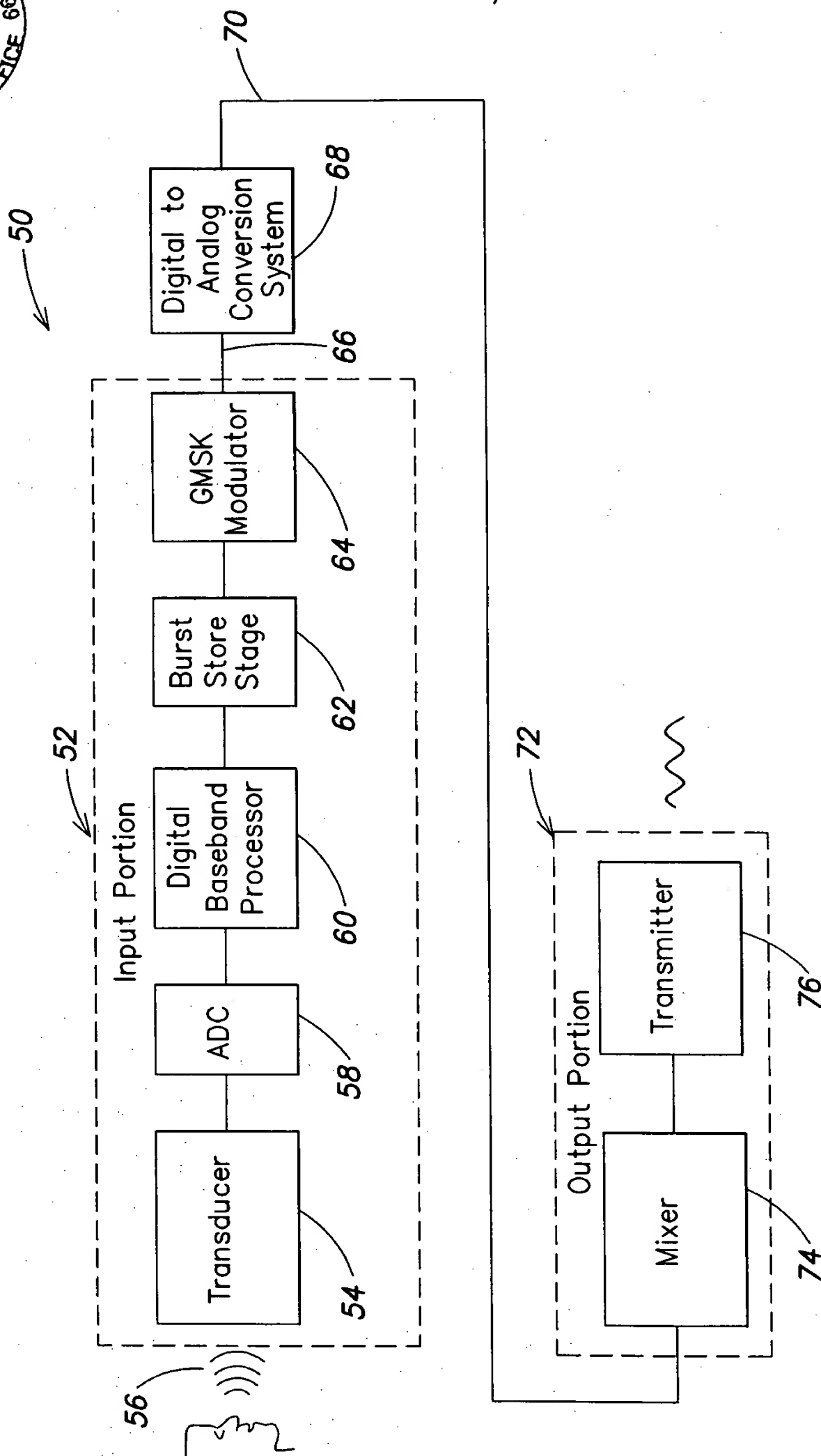


FIG. 1

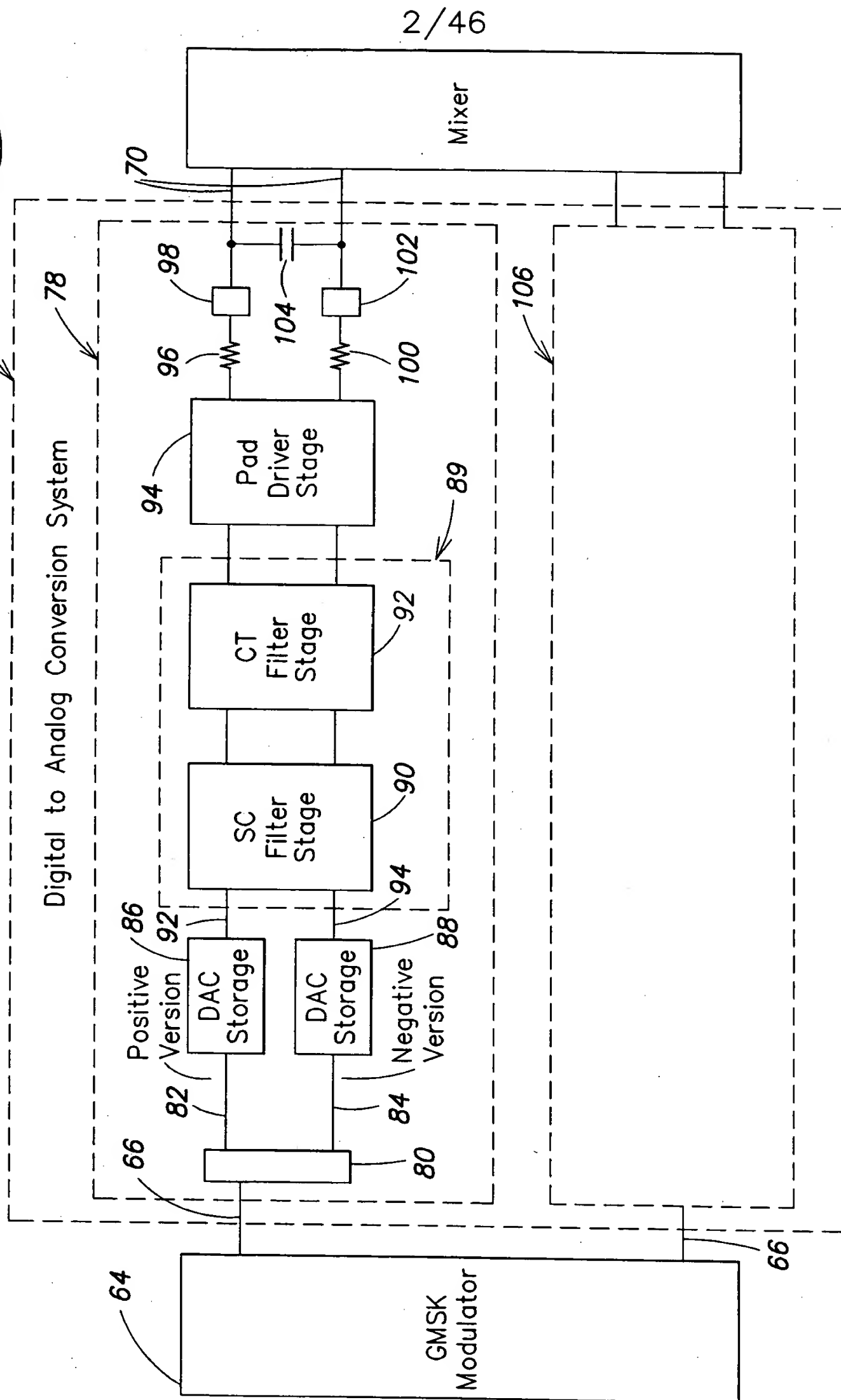
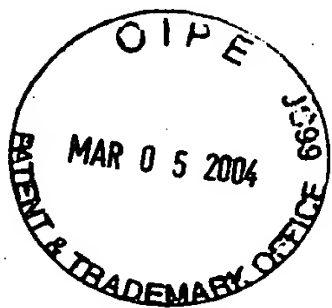


FIG. 2



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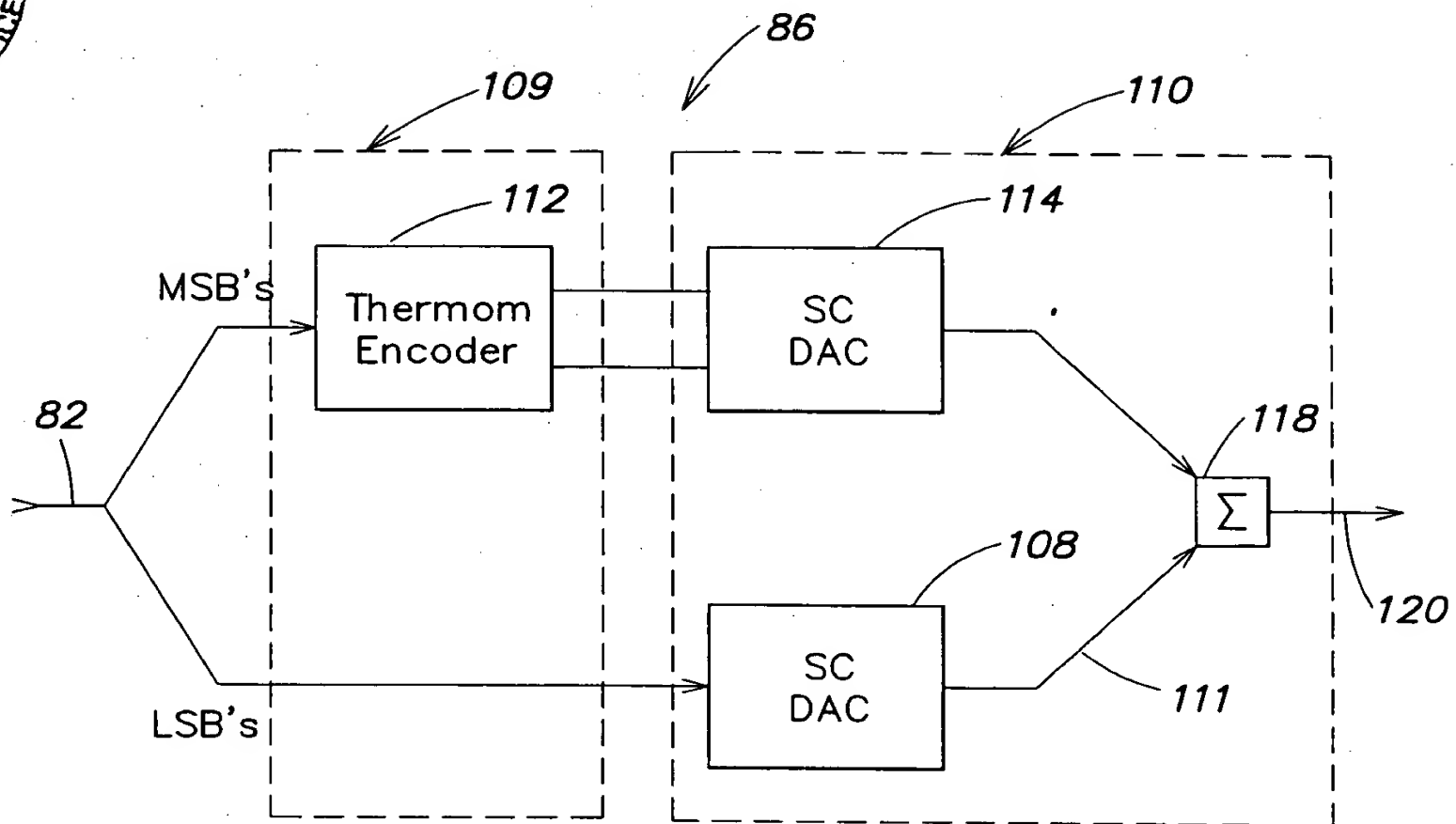


FIG. 3

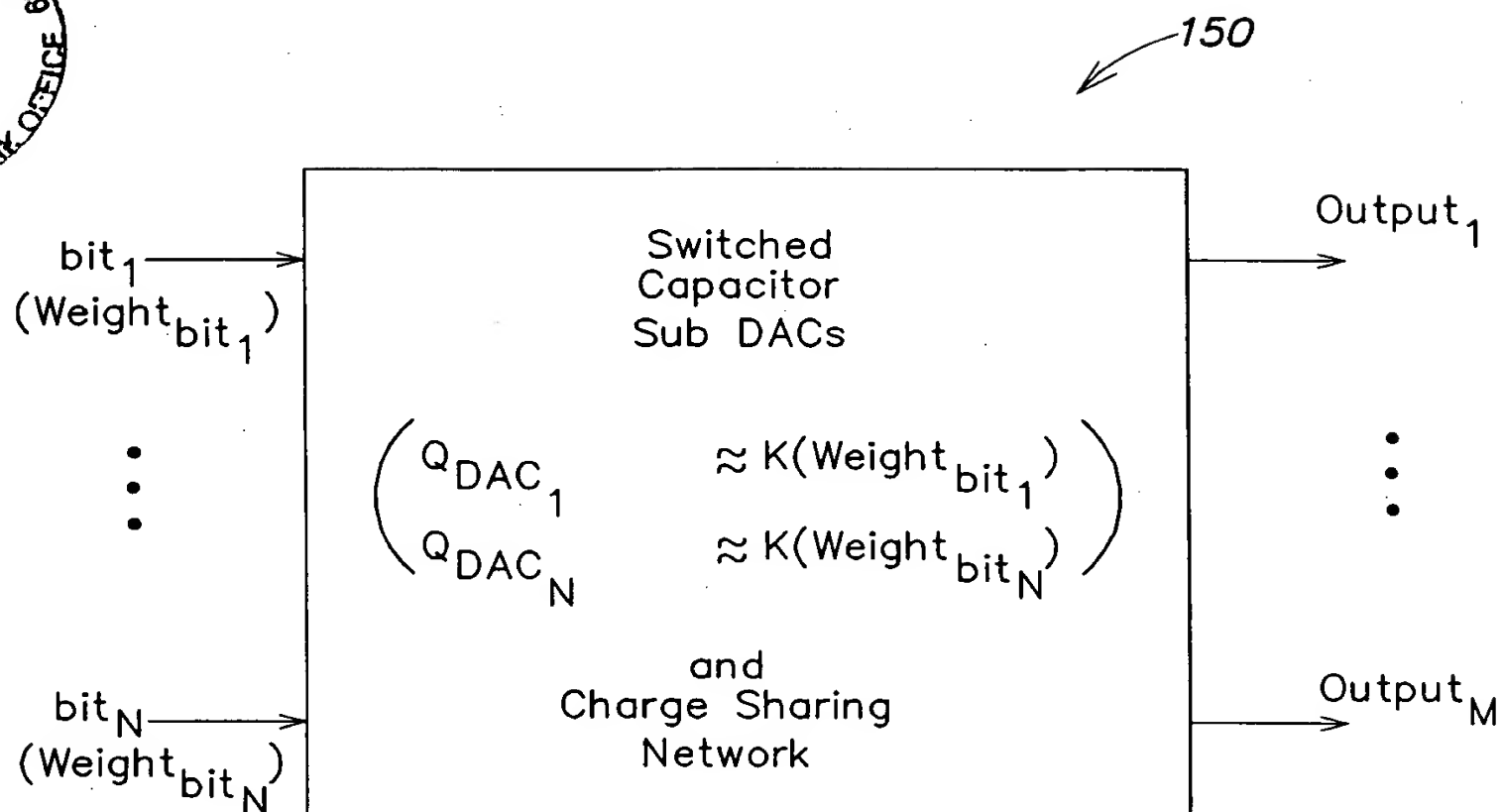
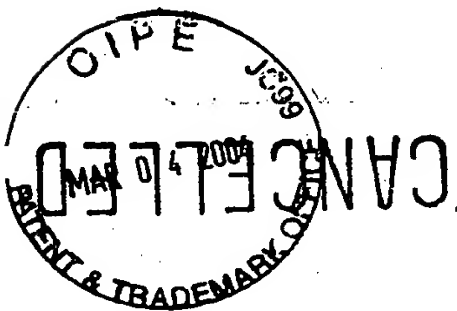


FIG. 4



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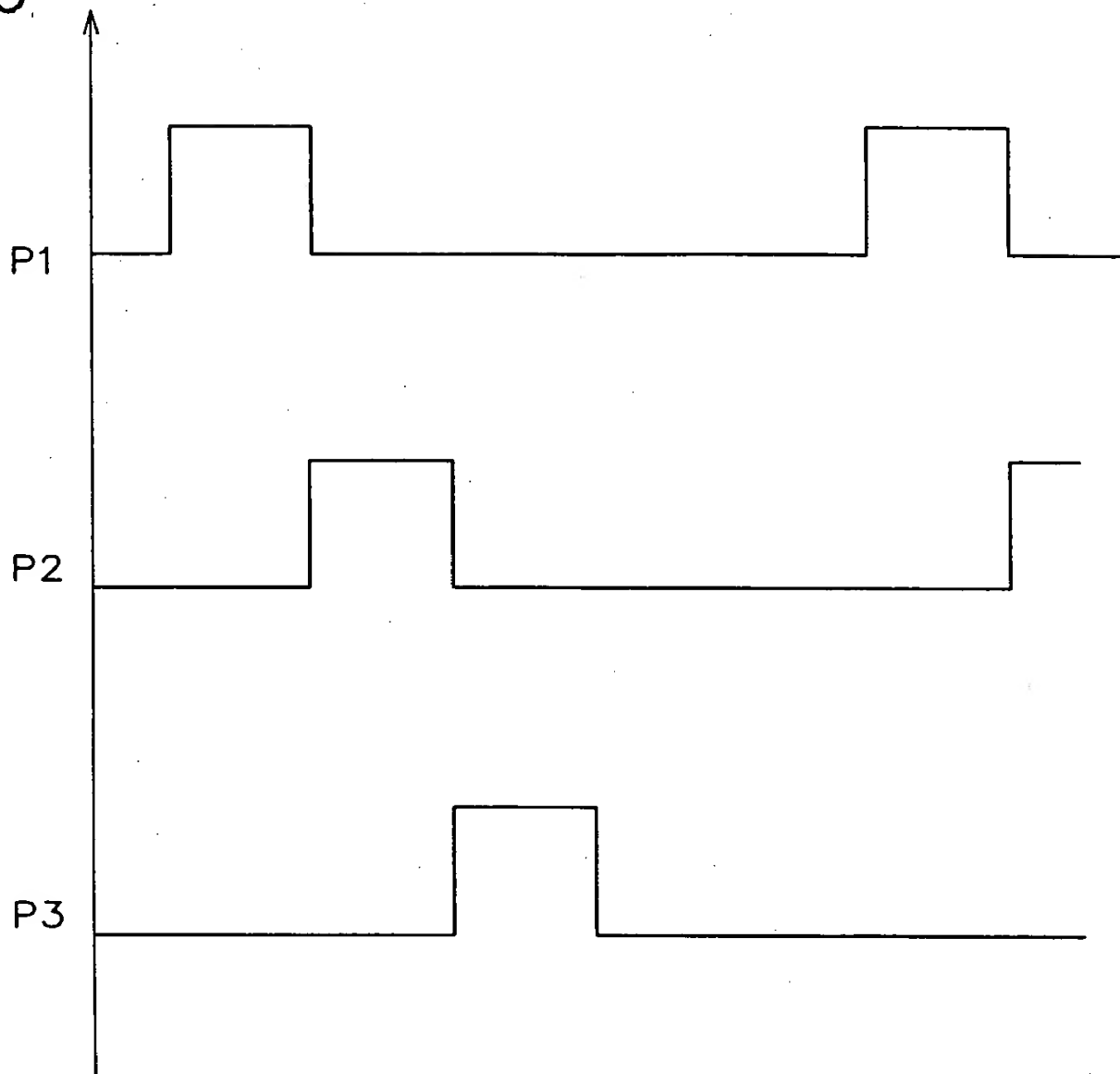
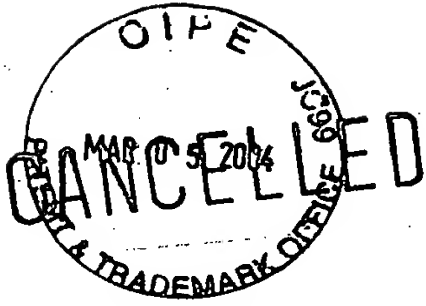
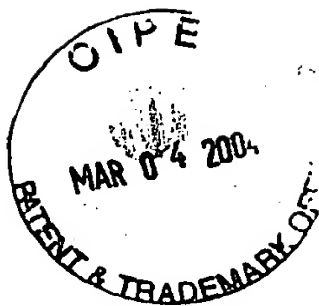


FIG. 6



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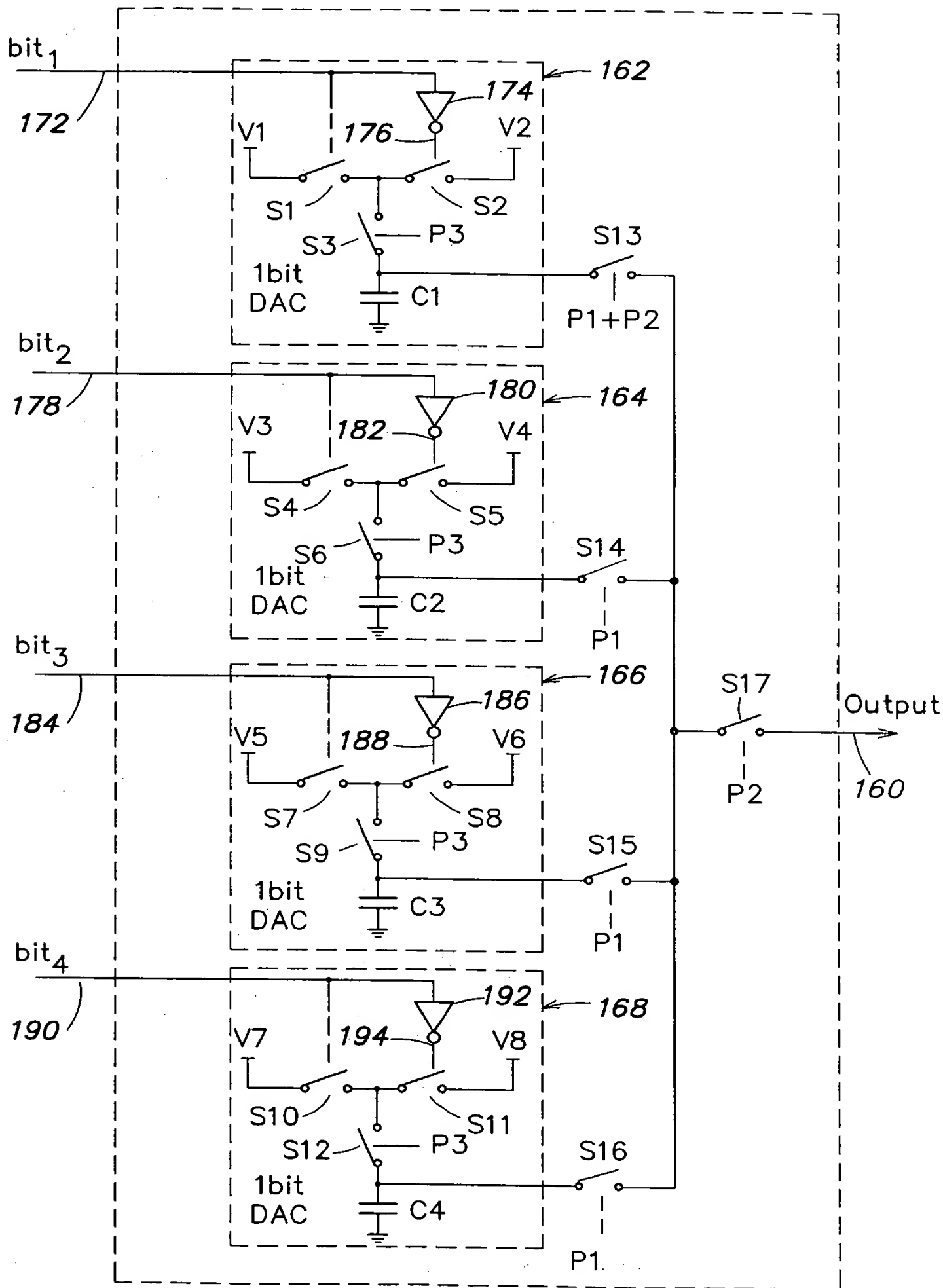
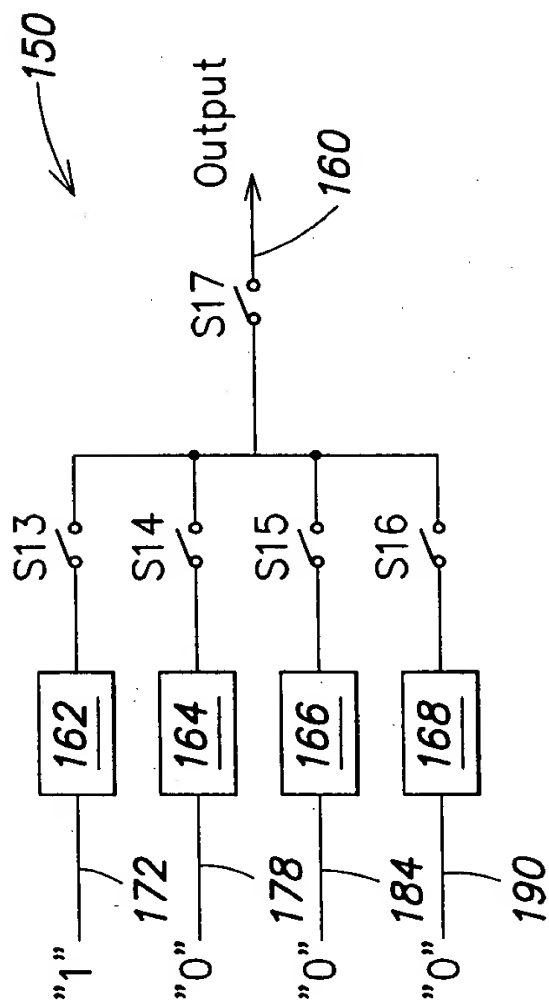
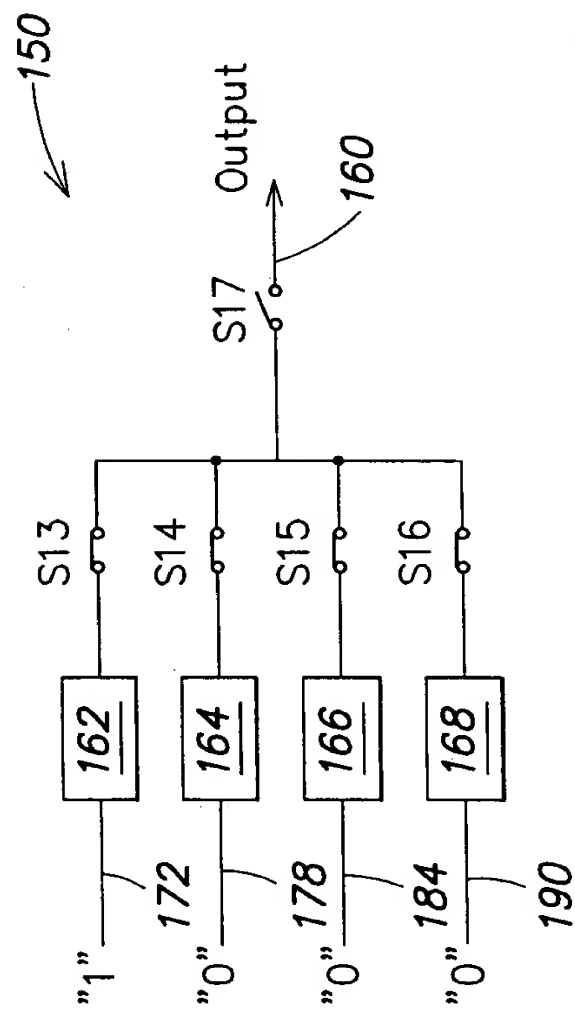


FIG. 5



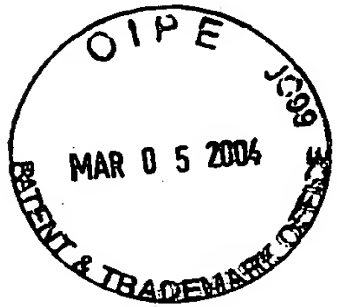
| | | |
|--------|------------------------|--------------------------|
| P1="0" | V(C1)=V _{ref} | Q(C1)=C*V _{ref} |
| P2="0" | V(C2)=0 | Q(C2)=0 |
| P3="1" | V(C3)=0 | Q(C3)=0 |
| | V(C4)=0 | Q(C4)=0 |

FIG. 7A



| | | |
|--------|---------------------------|-----------------------------|
| P1="1" | V(C1)=V _{ref} /4 | Q(C1)=C*V _{ref} /4 |
| P2="0" | V(C2)=V _{ref} /4 | Q(C2)=C*V _{ref} /4 |
| P3="0" | V(C3)=V _{ref} /4 | Q(C3)=C*V _{ref} /4 |
| | V(C4)=V _{ref} /4 | Q(C4)=C*V _{ref} /4 |

FIG. 7B



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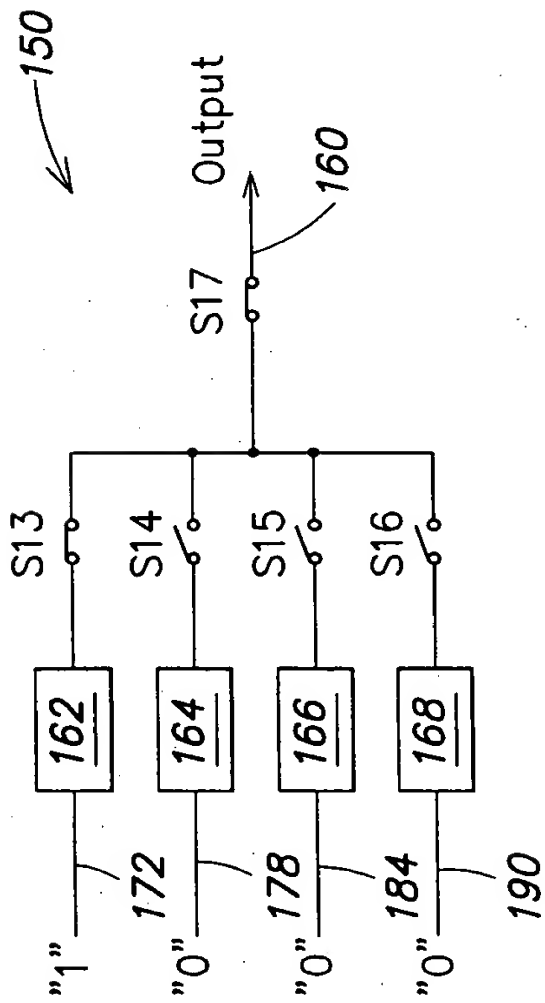


FIG. 7C

| | | |
|----------|---------------------|-----------------------------|
| P1 = "0" | $V(C1) = V_{ref}/4$ | $Q(C1) = C \cdot V_{ref}/4$ |
| P2 = "1" | $V(C2) = V_{ref}/4$ | $Q(C2) = C \cdot V_{ref}/4$ |
| P3 = "0" | $V(C3) = V_{ref}/4$ | $Q(C3) = C \cdot V_{ref}/4$ |
| | $V(C4) = V_{ref}/4$ | $Q(C4) = C \cdot V_{ref}/4$ |

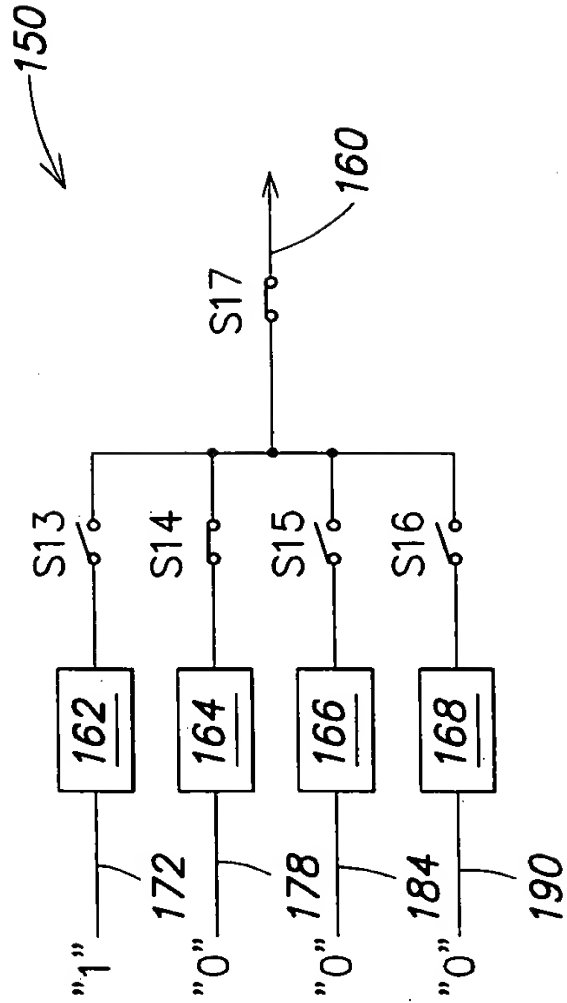


FIG. 10

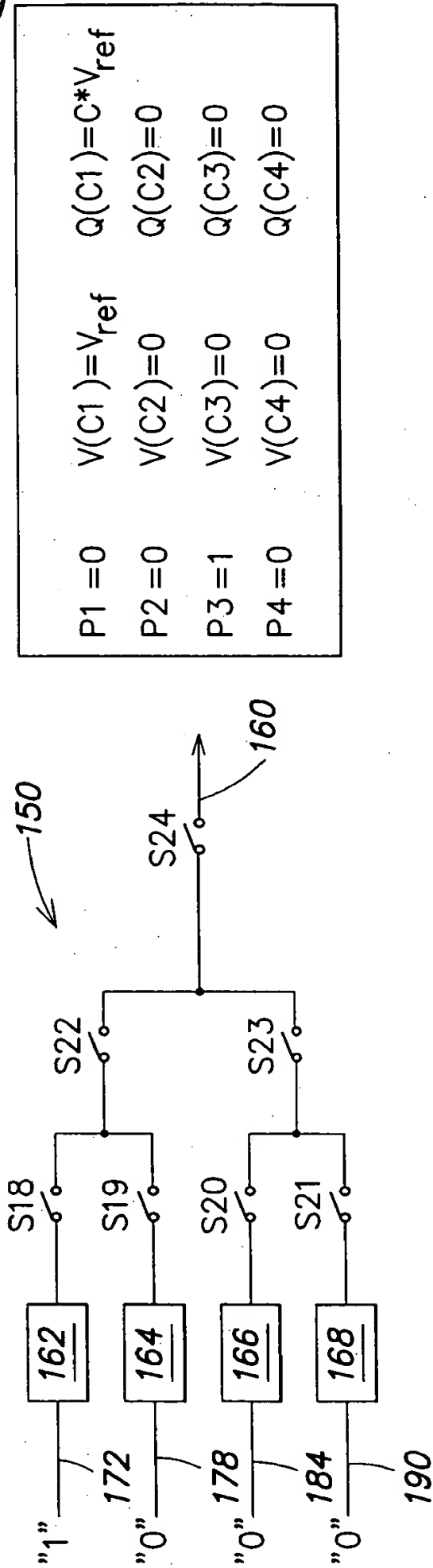
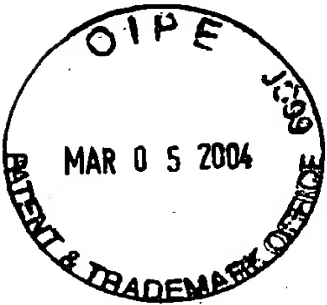


FIG. 8A

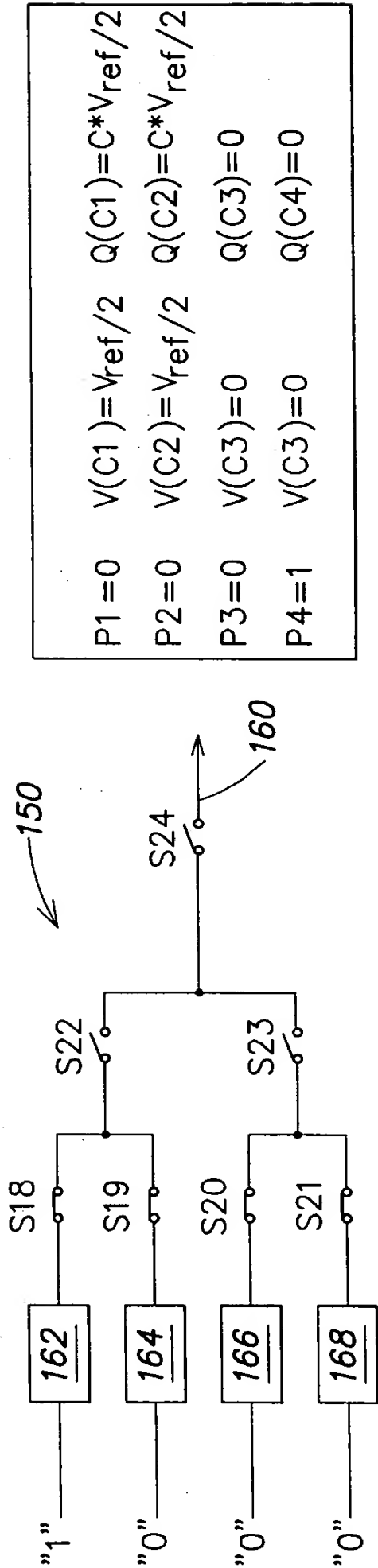
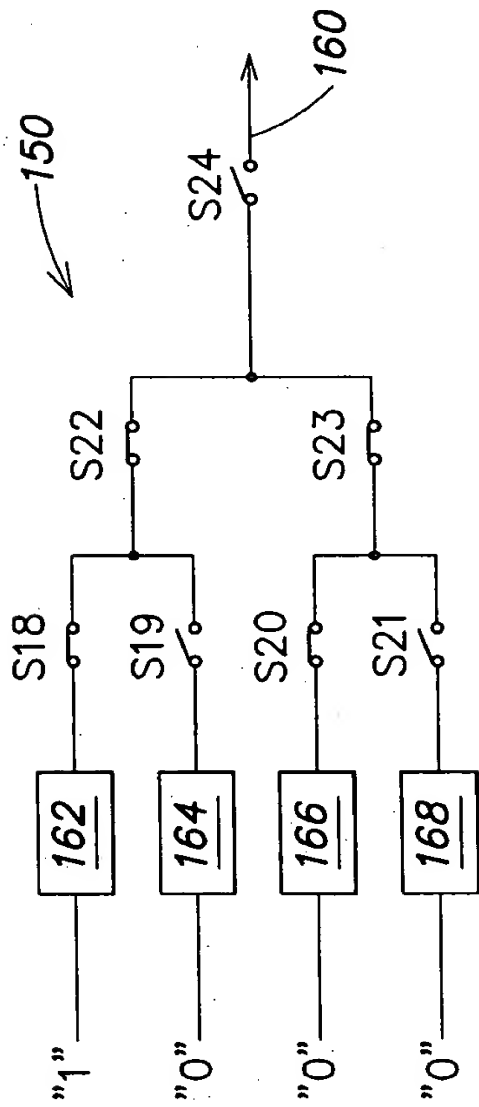
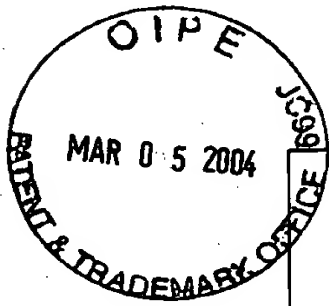


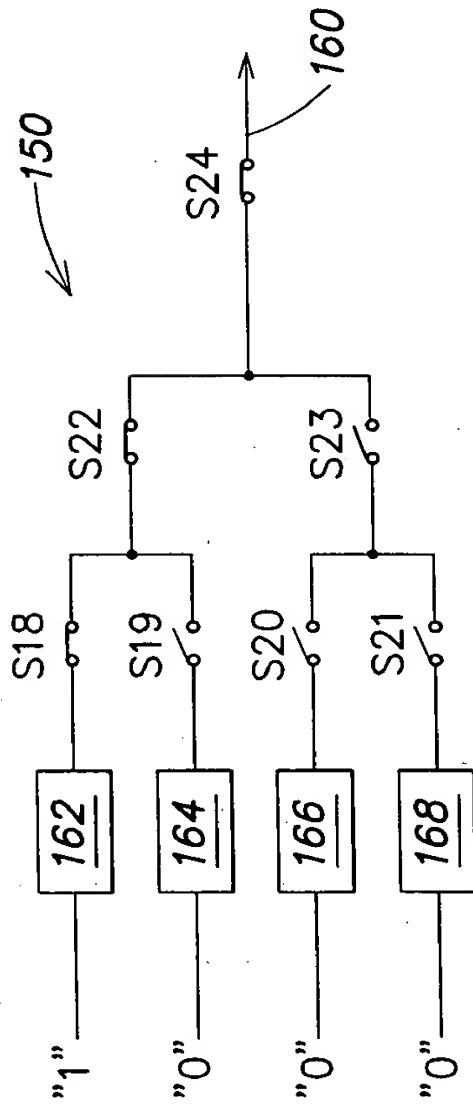
FIG. 8B

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| | | |
|--------|---------------------|-----------------------------|
| P1 = 1 | $V(C1) = V_{ref}/4$ | $Q(C1) = C \cdot V_{ref}/4$ |
| P2 = 0 | $V(C2) = V_{ref}/2$ | $Q(C2) = C \cdot V_{ref}/2$ |
| P3 = 0 | $V(C3) = V_{ref}/4$ | $Q(C3) = C \cdot V_{ref}/4$ |
| P4 = 0 | $V(C4) = 0$ | $Q(C4) = 0$ |

FIG. 8C



| | | |
|--------|---------------------|-----------------------------|
| P1 = 0 | $V(C1) = V_{ref}/4$ | $Q(C1) = C \cdot V_{ref}/4$ |
| P2 = 1 | $V(C2) = V_{ref}/2$ | $Q(C2) = C \cdot V_{ref}/2$ |
| P3 = 0 | $V(C3) = V_{ref}/4$ | $Q(C3) = C \cdot V_{ref}/4$ |
| P4 = 0 | $V(C4) = 0$ | $Q(C4) = 0$ |

FIG. 8D

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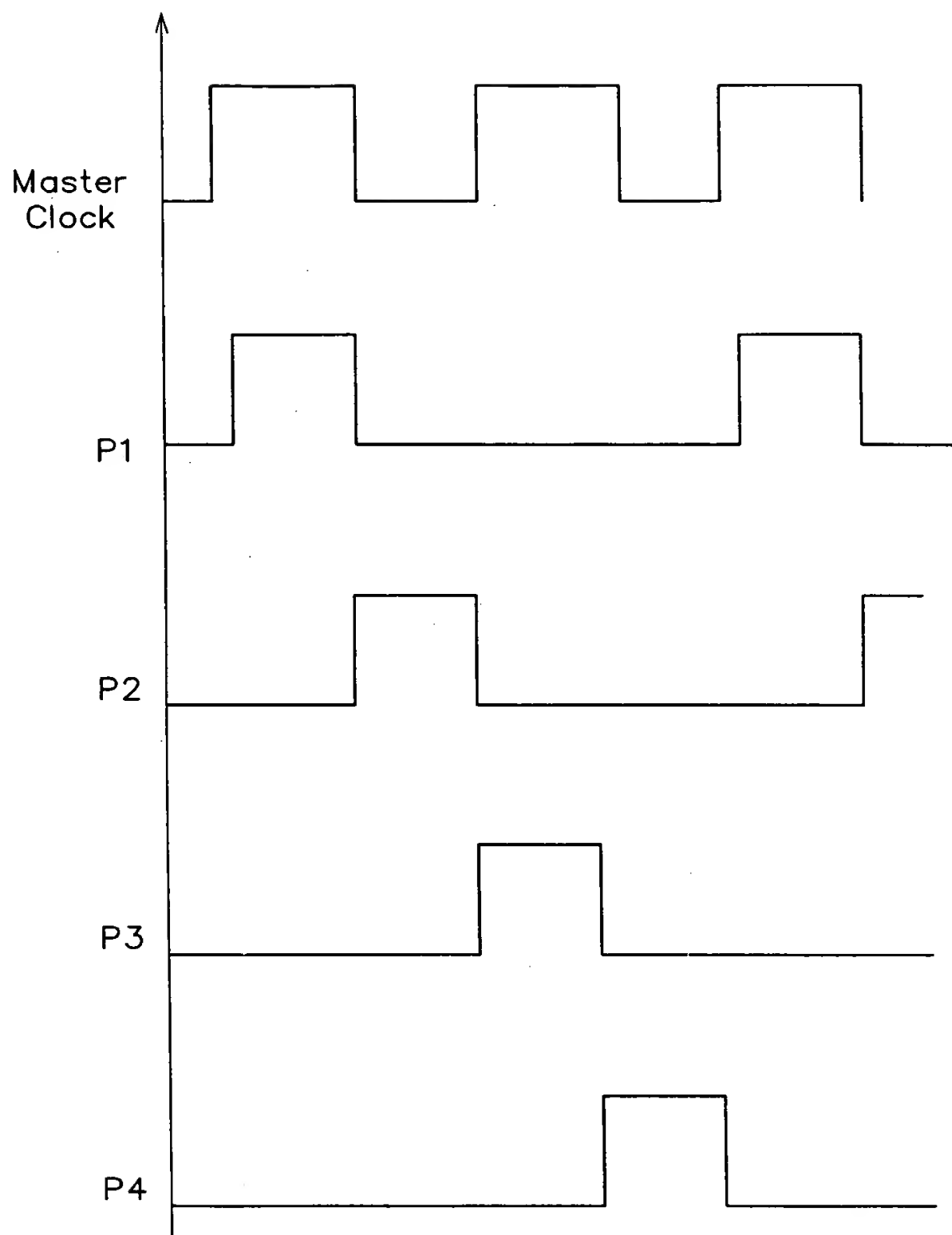
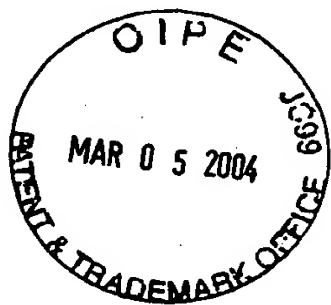
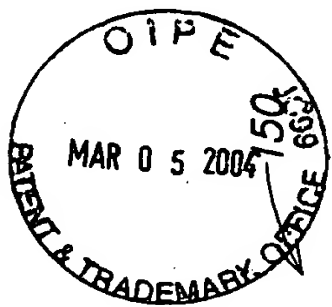


FIG. 9



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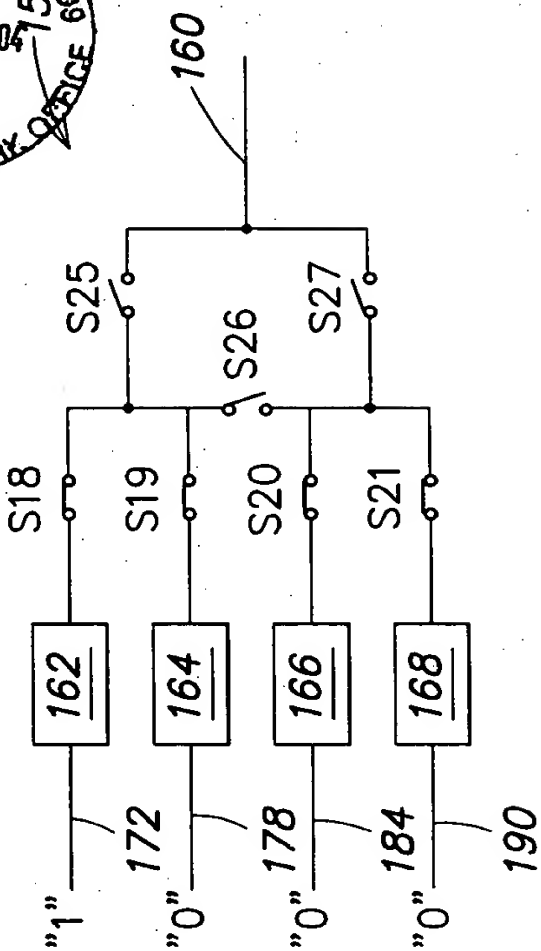


FIG. 11B

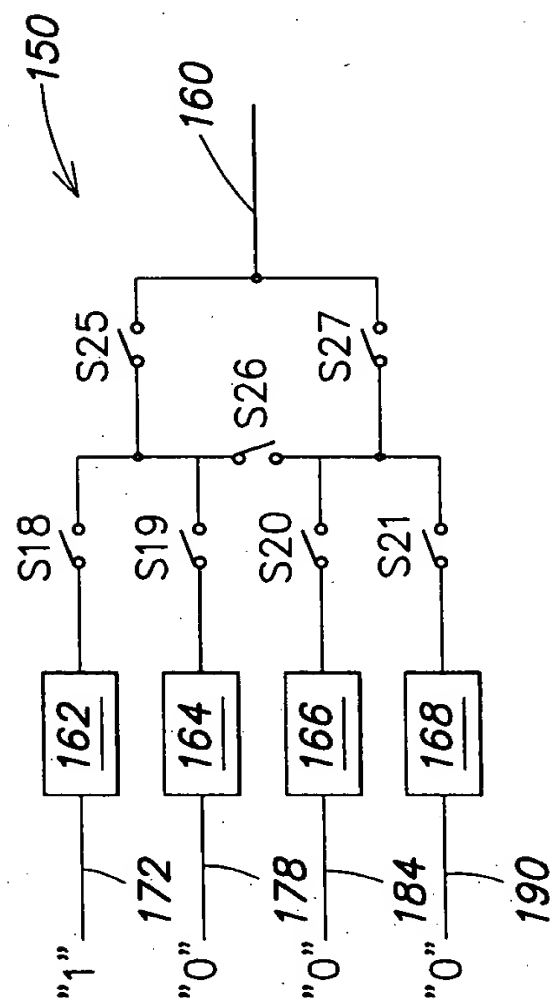


FIG. 11A

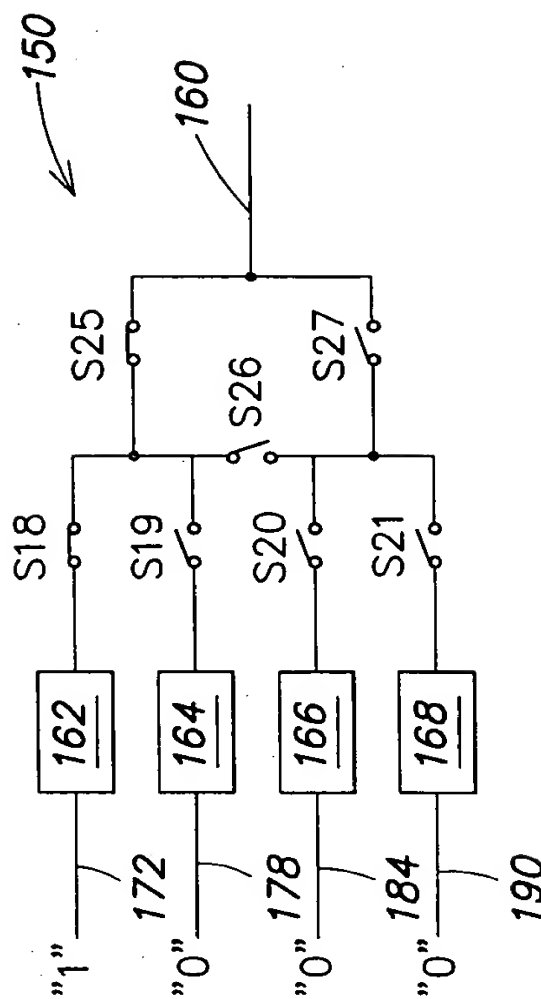


FIG. 11D

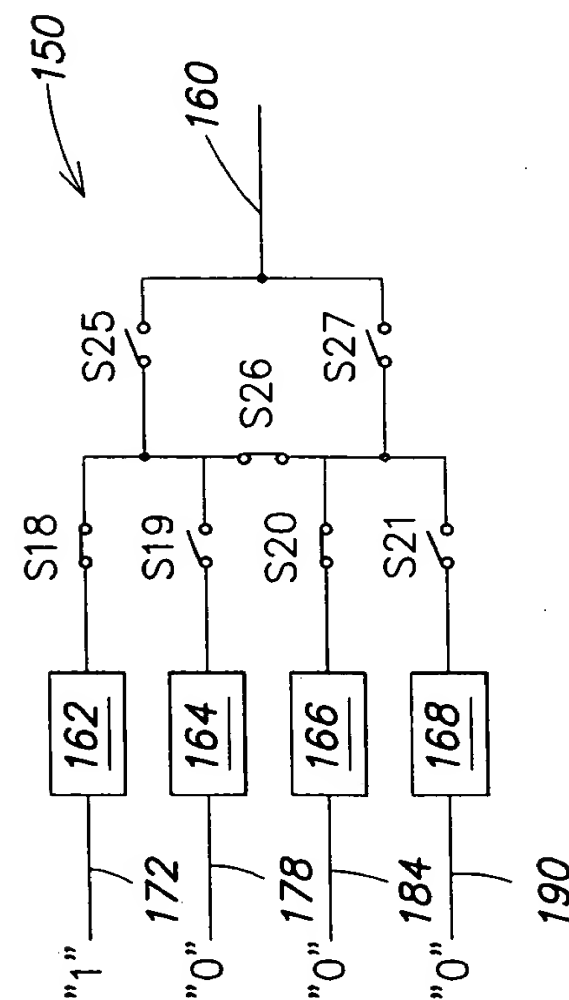


FIG. 11C

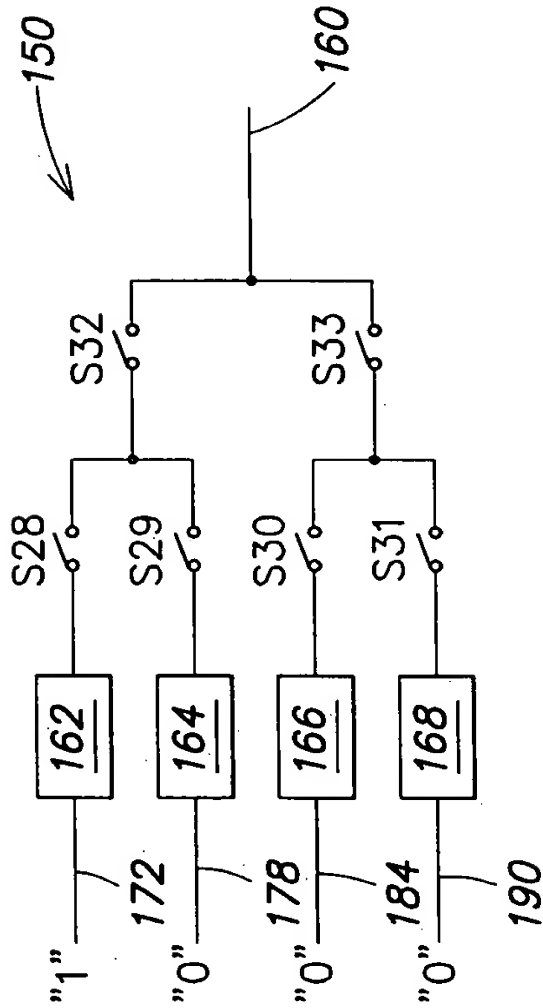
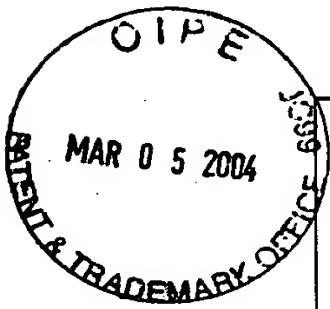


FIG. 12A

| | | |
|--------|-------------------|---------------------------|
| P1 = 0 | $V(C1) = V_{ref}$ | $Q(C1) = C \cdot V_{ref}$ |
| P2 = 0 | $V(C2) = 0$ | $Q(C2) = 0$ |
| P3 = 1 | $V(C3) = 0$ | $Q(C3) = 0$ |
| | $V(C4) = 0$ | $Q(C4) = 0$ |

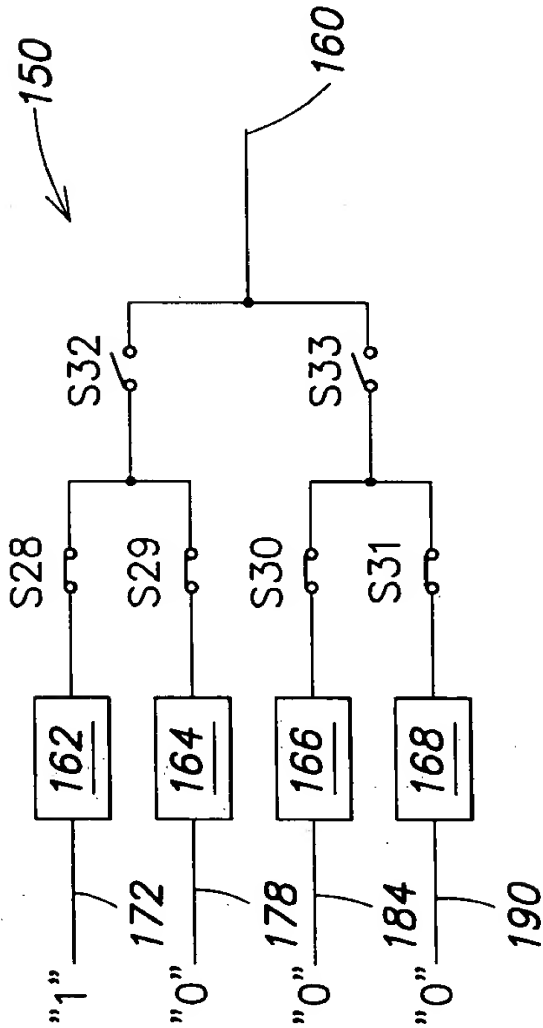


FIG. 12B

| | | |
|--------|---------------------|-----------------------------|
| P1 = 1 | $V(C1) = V_{ref}/2$ | $Q(C1) = C \cdot V_{ref}/2$ |
| P2 = 0 | $V(C2) = V_{ref}/2$ | $Q(C2) = C \cdot V_{ref}/2$ |
| P3 = 0 | $V(C3) = 0$ | $Q(C3) = 0$ |
| | $V(C4) = 0$ | $Q(C4) = 0$ |



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| | | |
|------|-------------------|---------------------|
| P1=0 | $V(C1)=V_{ref}/2$ | $Q(C1)=C*V_{ref}/2$ |
| P2=1 | $V(C2)=V_{ref}/2$ | $Q(C2)=C*V_{ref}/2$ |
| P3=0 | $V(C3)=0$ | $Q(C3)=0$ |
| | $V(C4)=0$ | $Q(C4)=0$ |

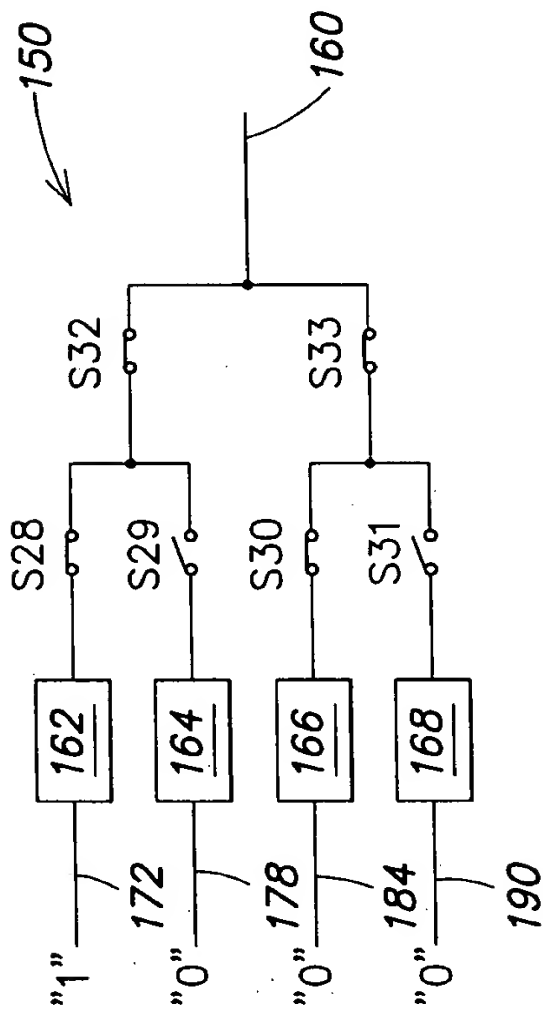


FIG. 12C

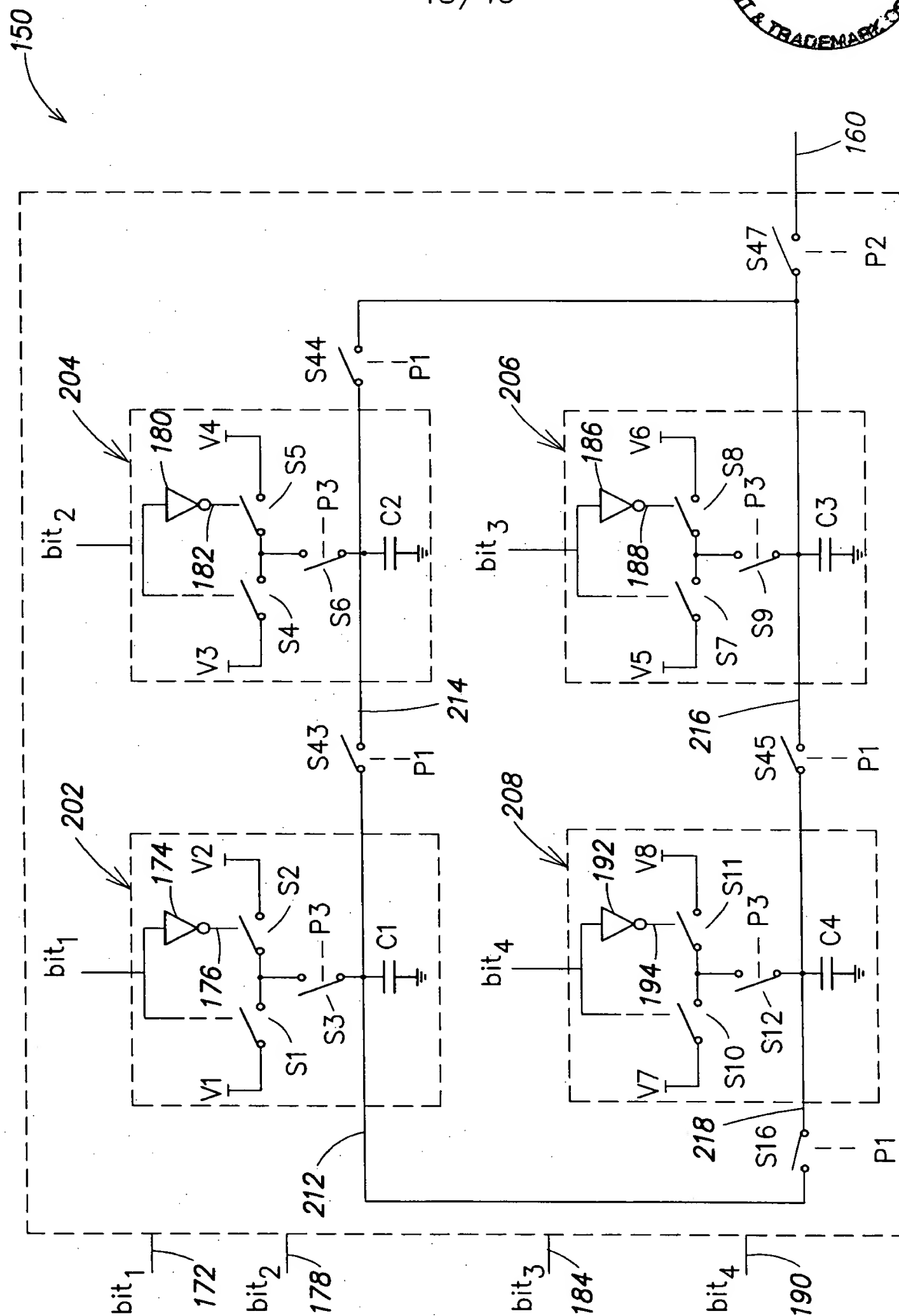
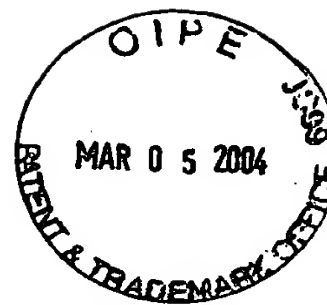
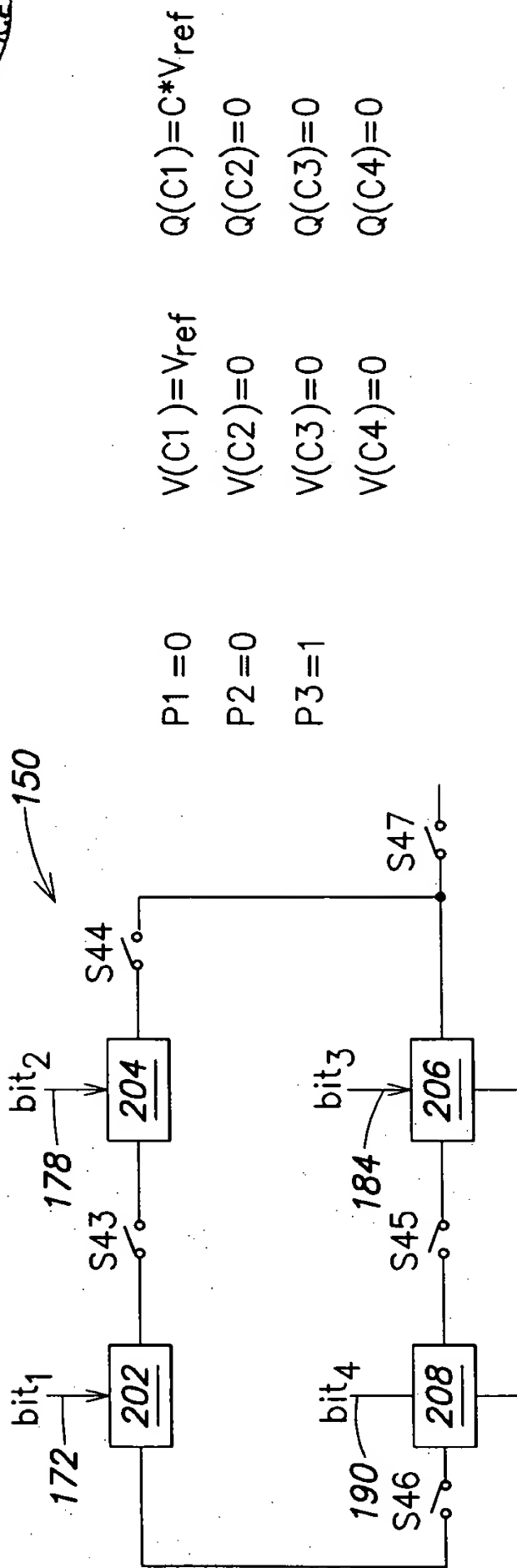


FIG. 13



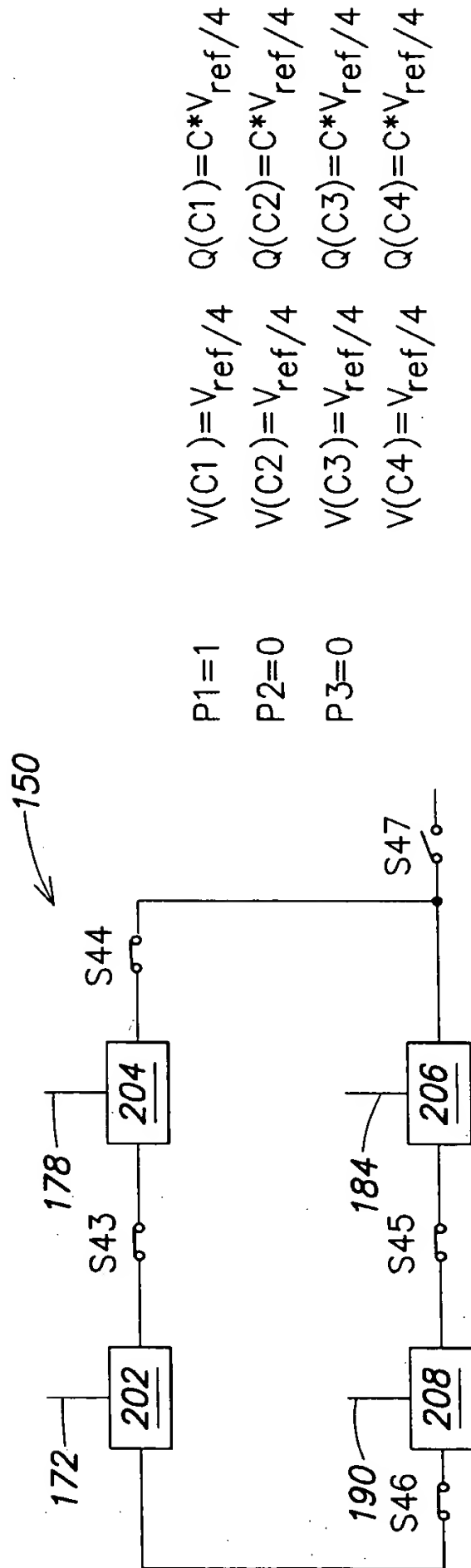
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$P1 = 0$
 $P2 = 0$
 $P3 = 1$

$V(C1) = V_{ref}$
 $V(C2) = 0$
 $V(C3) = 0$
 $V(C4) = 0$

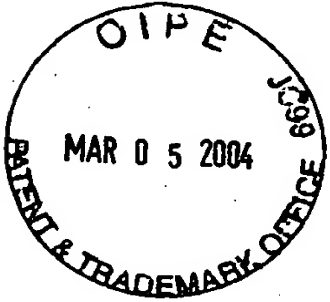
$Q(C1) = C \cdot V_{ref}$
 $Q(C2) = 0$
 $Q(C3) = 0$
 $Q(C4) = 0$



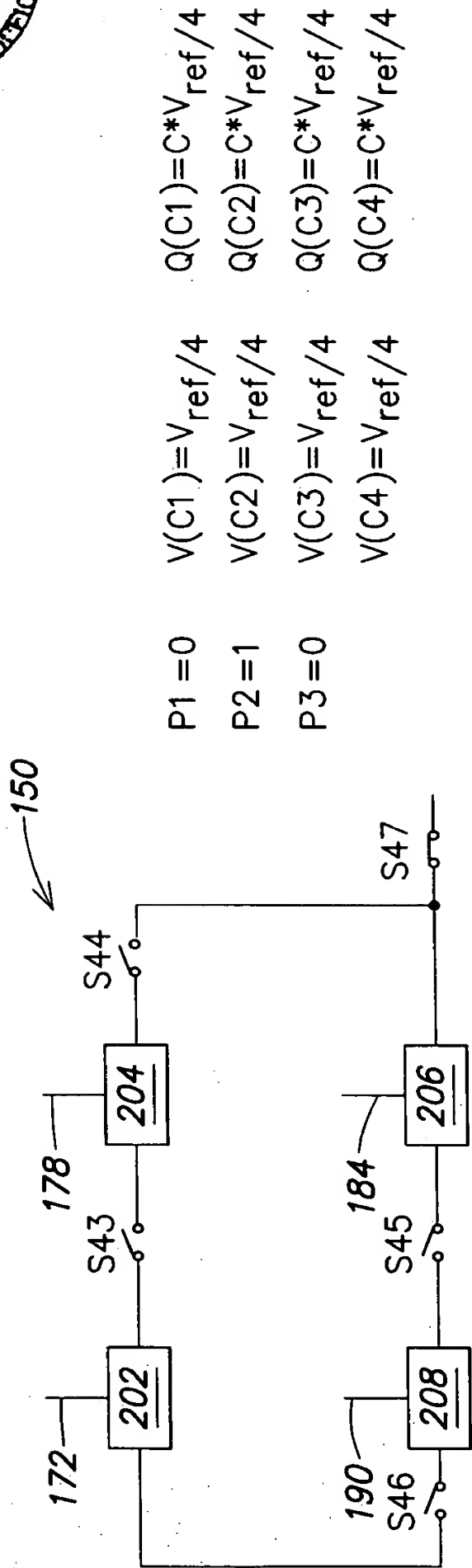
$P1 = 1$
 $P2 = 0$
 $P3 = 0$

$V(C1) = V_{ref}/4$
 $V(C2) = V_{ref}/4$
 $V(C3) = V_{ref}/4$
 $V(C4) = V_{ref}/4$

$Q(C1) = C \cdot V_{ref}/4$
 $Q(C2) = C \cdot V_{ref}/4$
 $Q(C3) = C \cdot V_{ref}/4$
 $Q(C4) = C \cdot V_{ref}/4$



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| | | |
|----------|---------------------|-------------------------|
| $P1 = 0$ | $V(C1) = V_{ref}/4$ | $Q(C1) = C * V_{ref}/4$ |
| $P2 = 1$ | $V(C2) = V_{ref}/4$ | $Q(C2) = C * V_{ref}/4$ |
| $P3 = 0$ | $V(C3) = V_{ref}/4$ | $Q(C3) = C * V_{ref}/4$ |
| | $V(C4) = V_{ref}/4$ | $Q(C4) = C * V_{ref}/4$ |

FIG. 14C

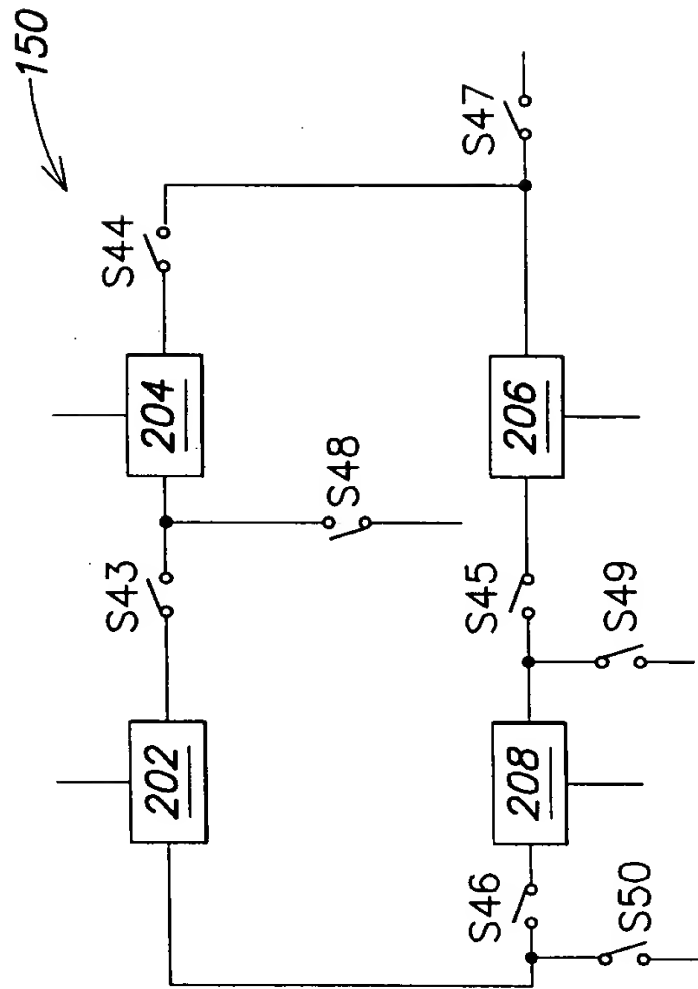
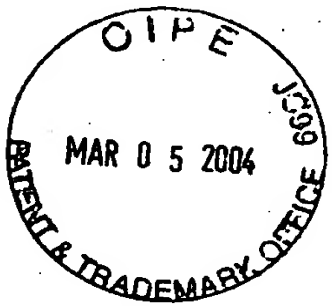


FIG. 15



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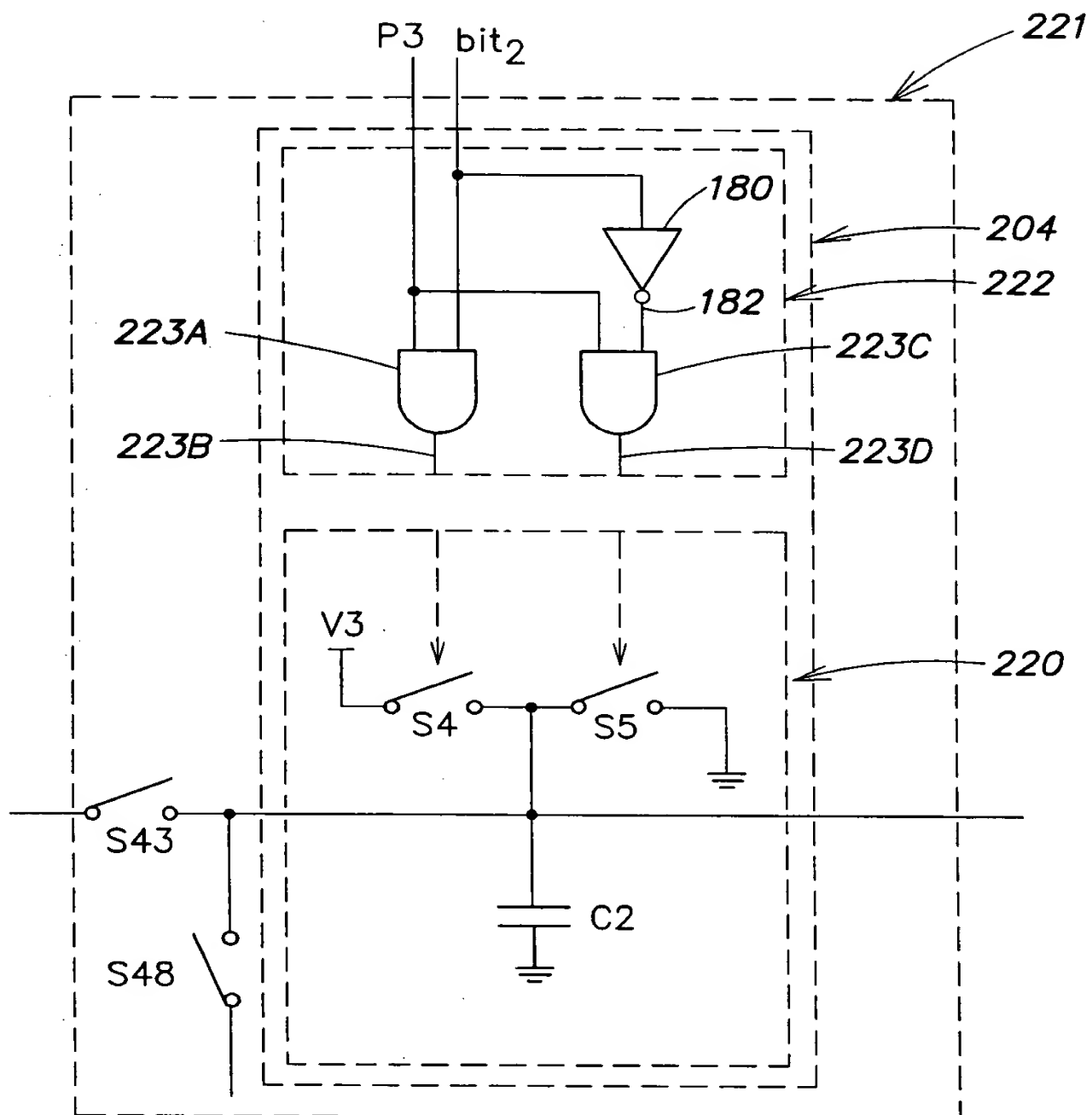


FIG. 16A

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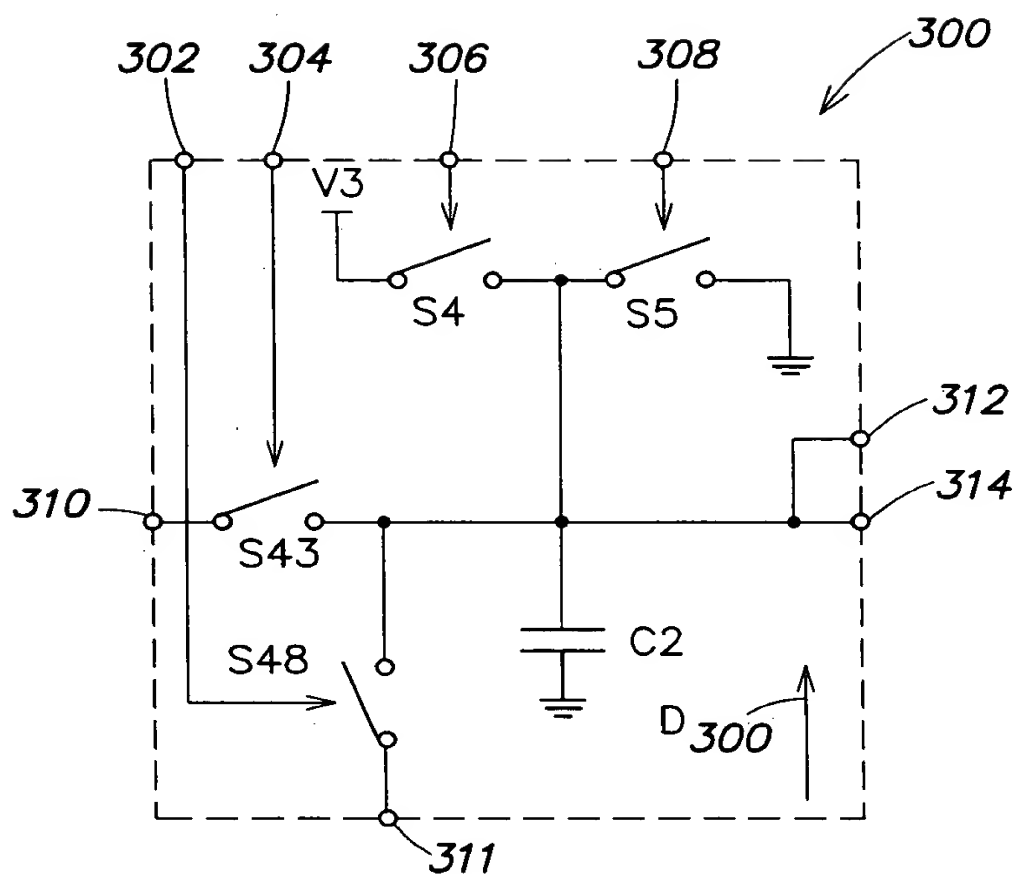
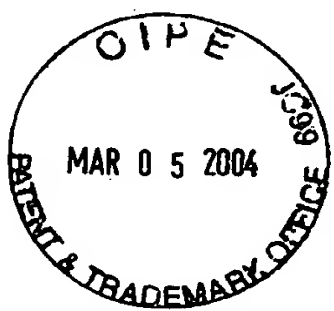
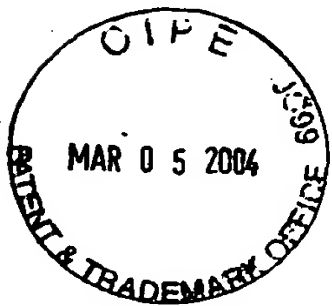


FIG. 16B



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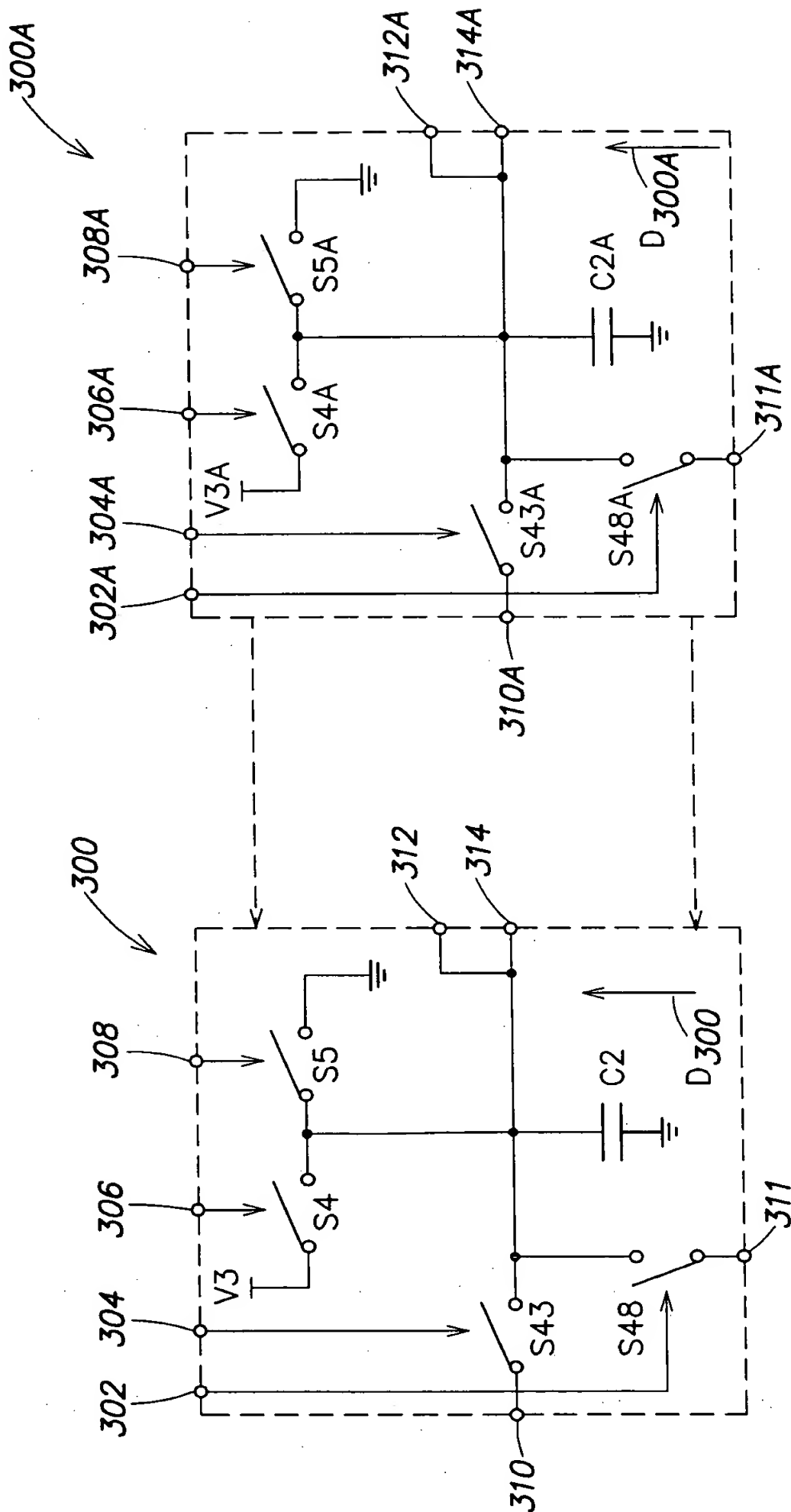


FIG. 16C

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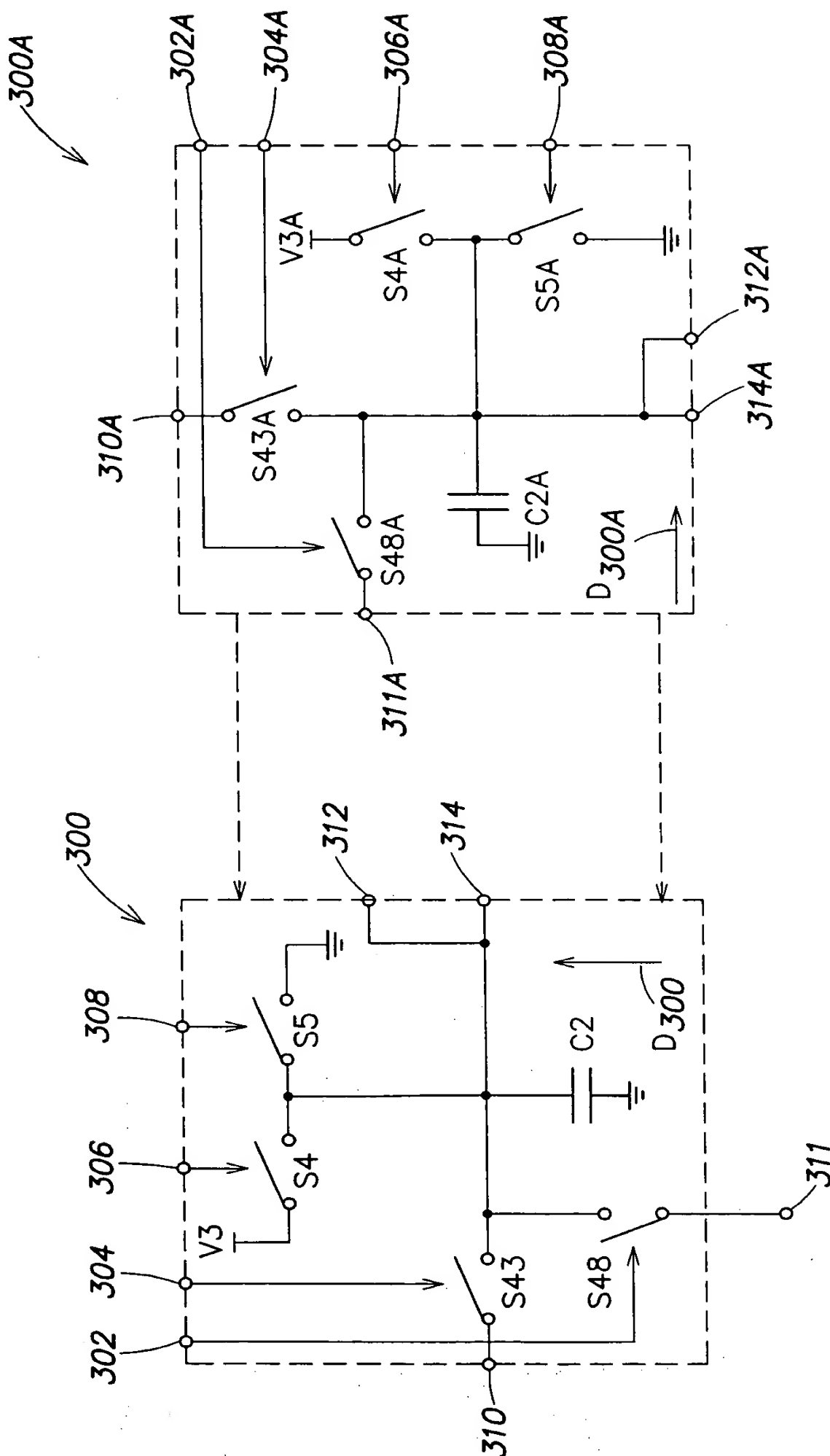
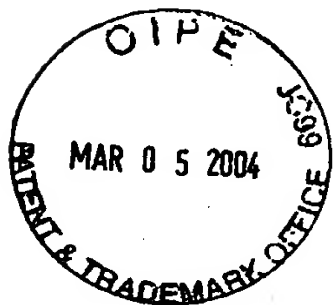


FIG. 16D

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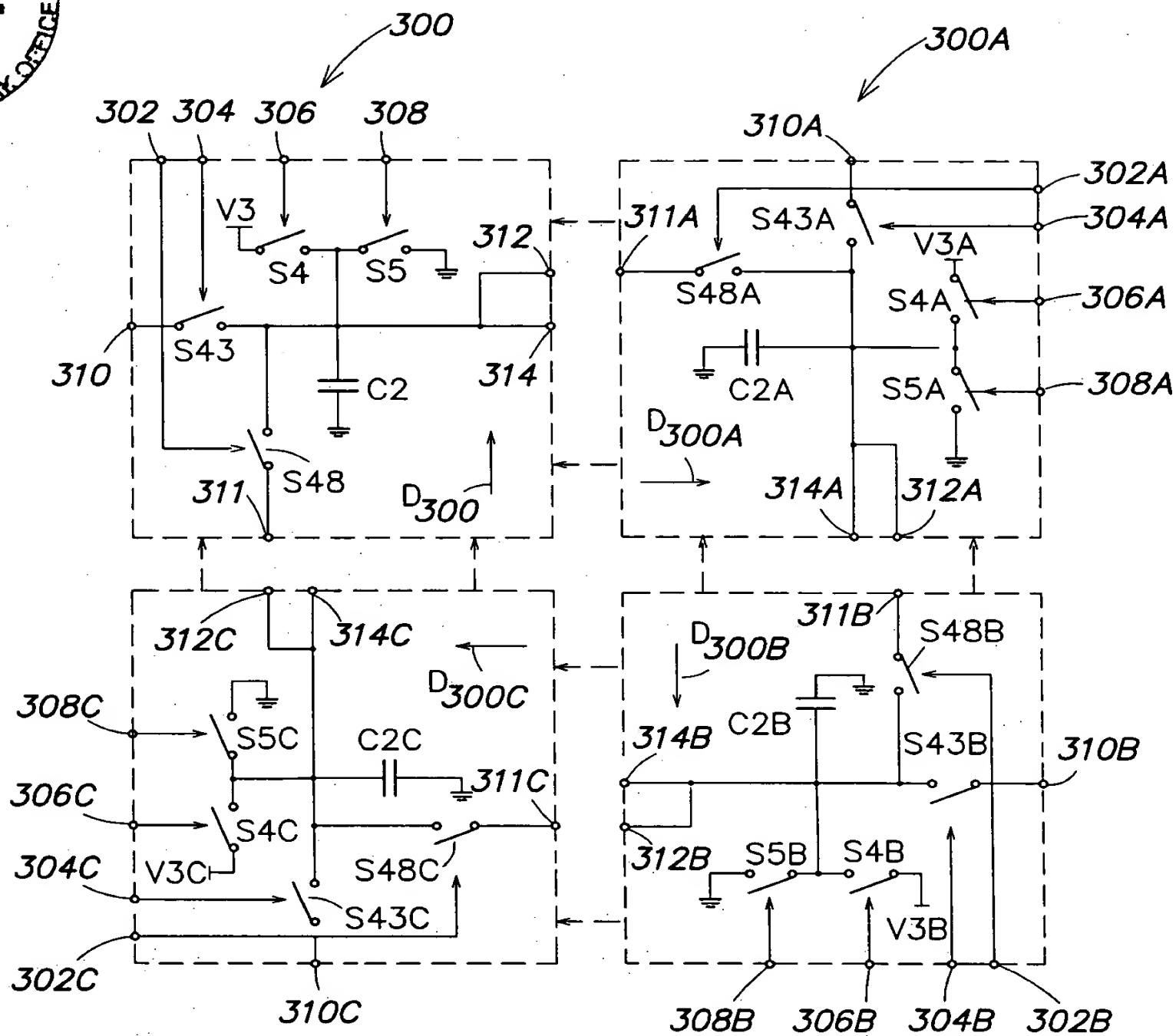
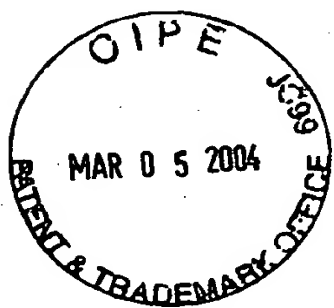


FIG. 16E

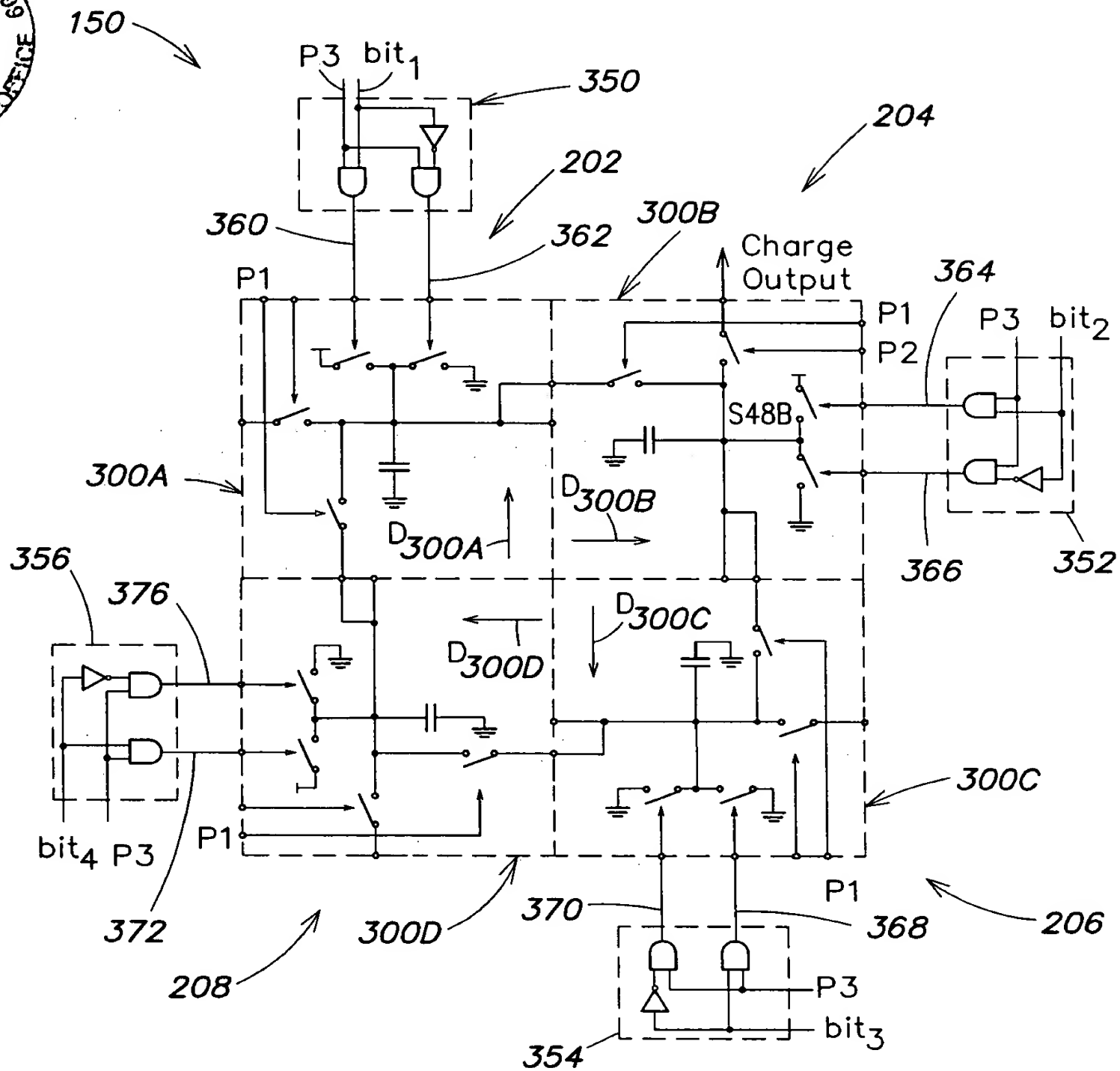


FIG. 17

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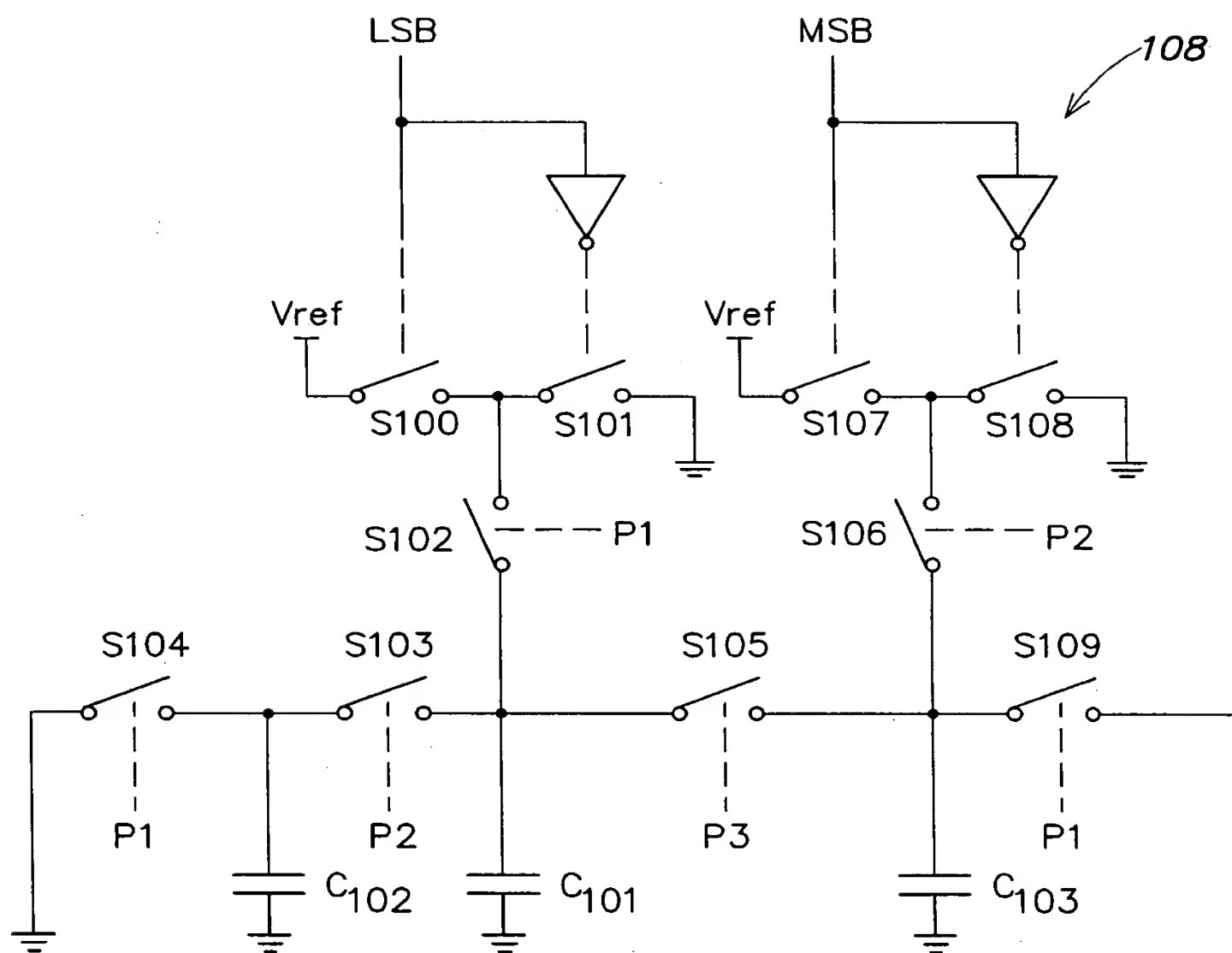
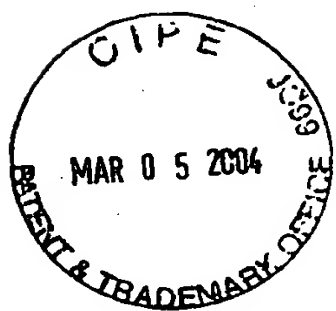
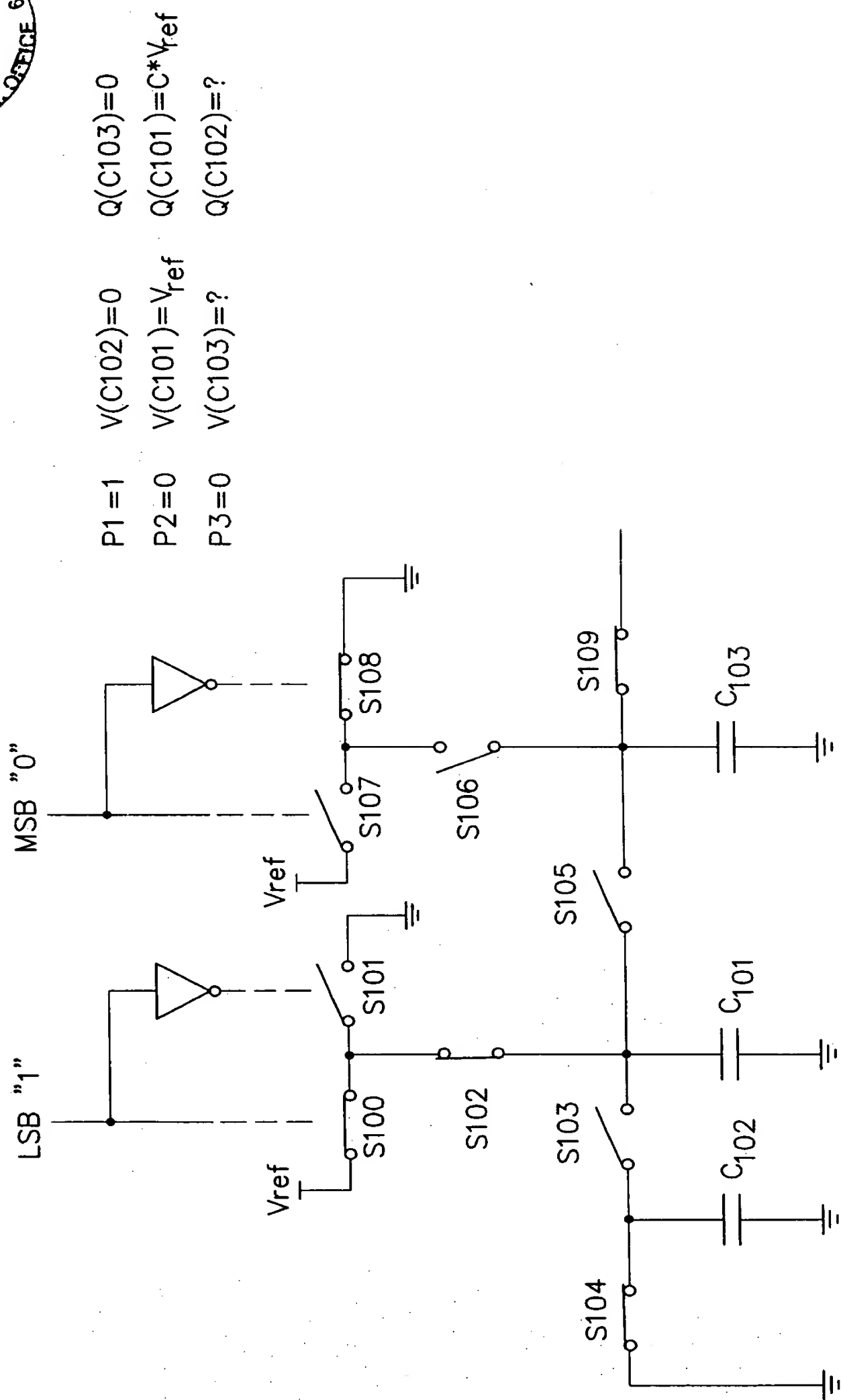
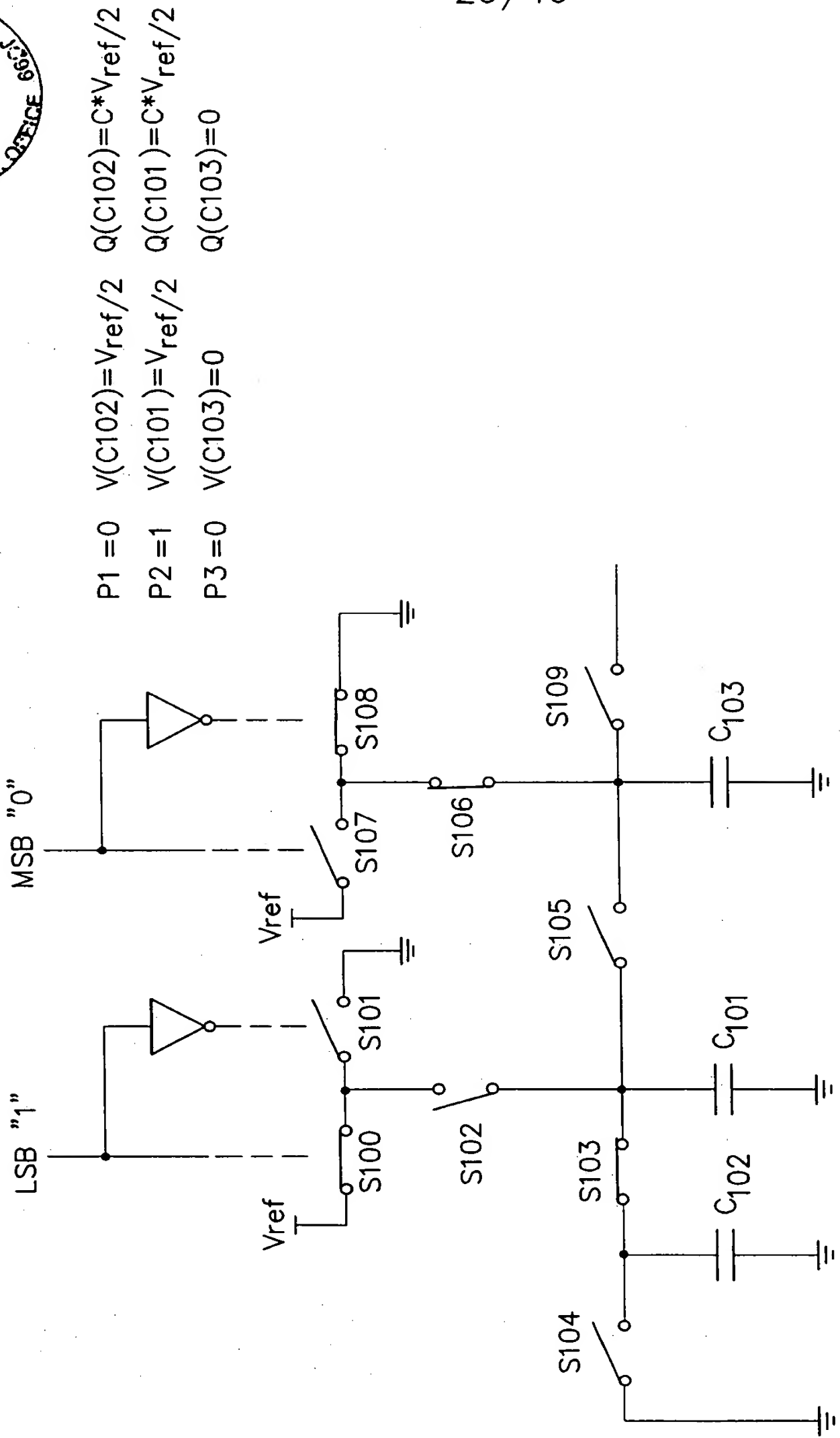
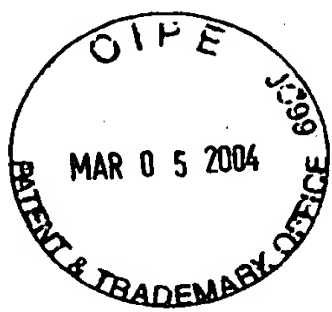


FIG. 18



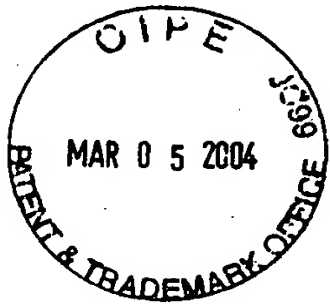
P1=1 V(C102)=0 Q(C103)=0
P2=0 V(C101)=V_{ref} Q(C101)=C*V_{ref}
P3=0 V(C103)=? Q(C102)=?

FIG. 19A



P1 = 0 V(C102) = Vref/2 Q(C102) = C * Vref/2
P2 = 1 V(C101) = Vref/2 Q(C101) = C * Vref/2
P3 = 0 V(C103) = 0 Q(C103) = 0

FIG. 19B



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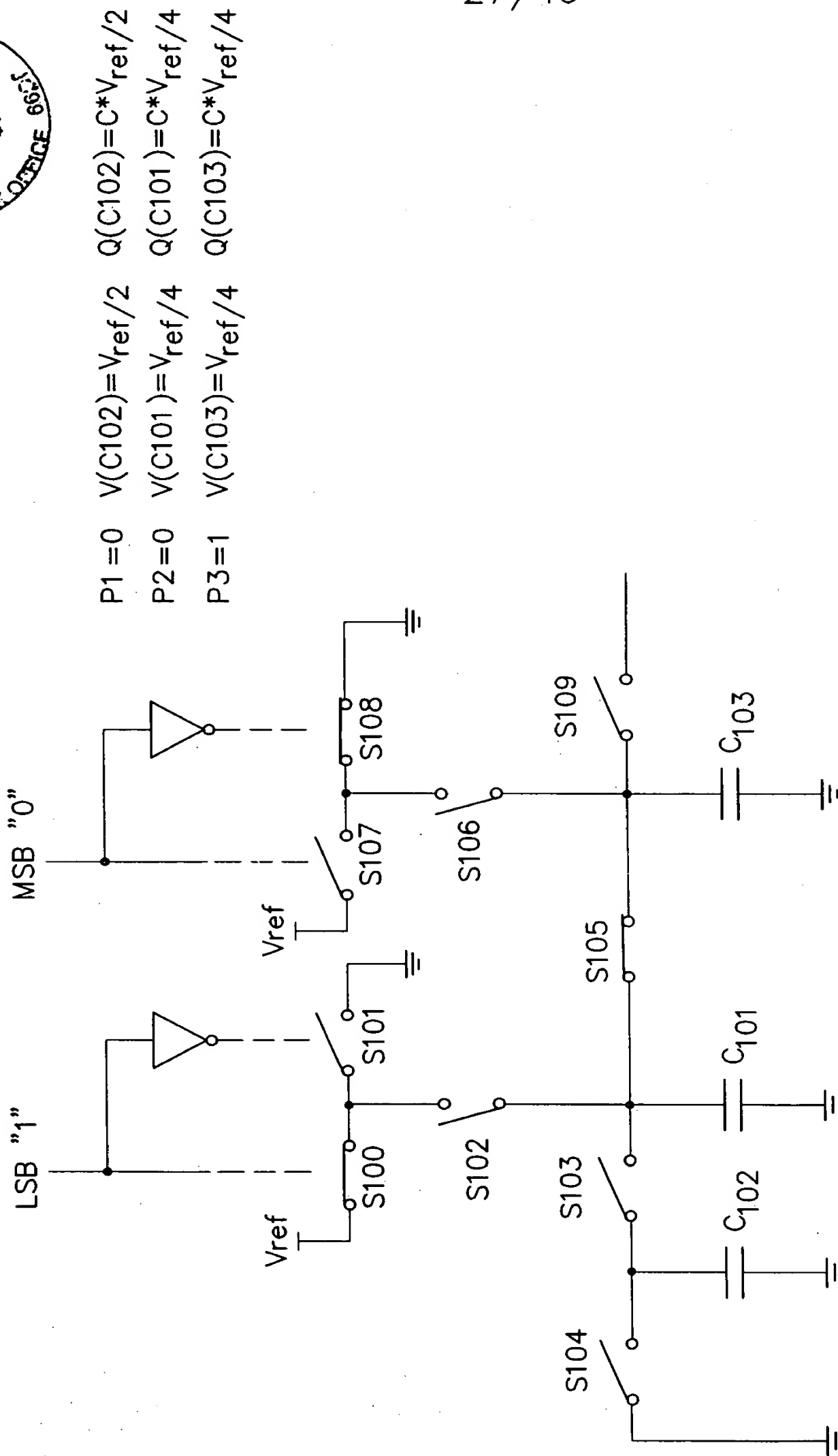


FIG. 19C

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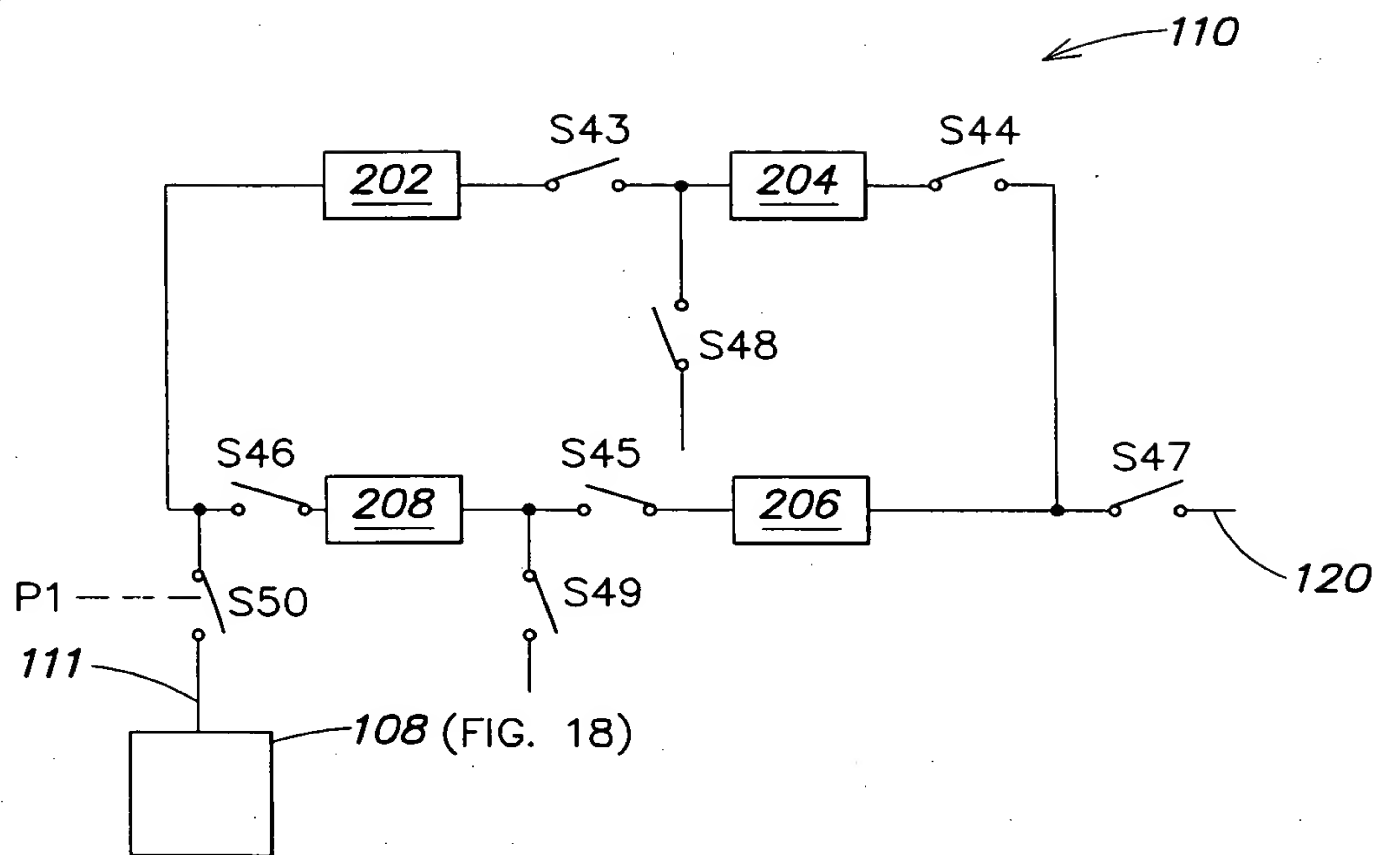


FIG. 20

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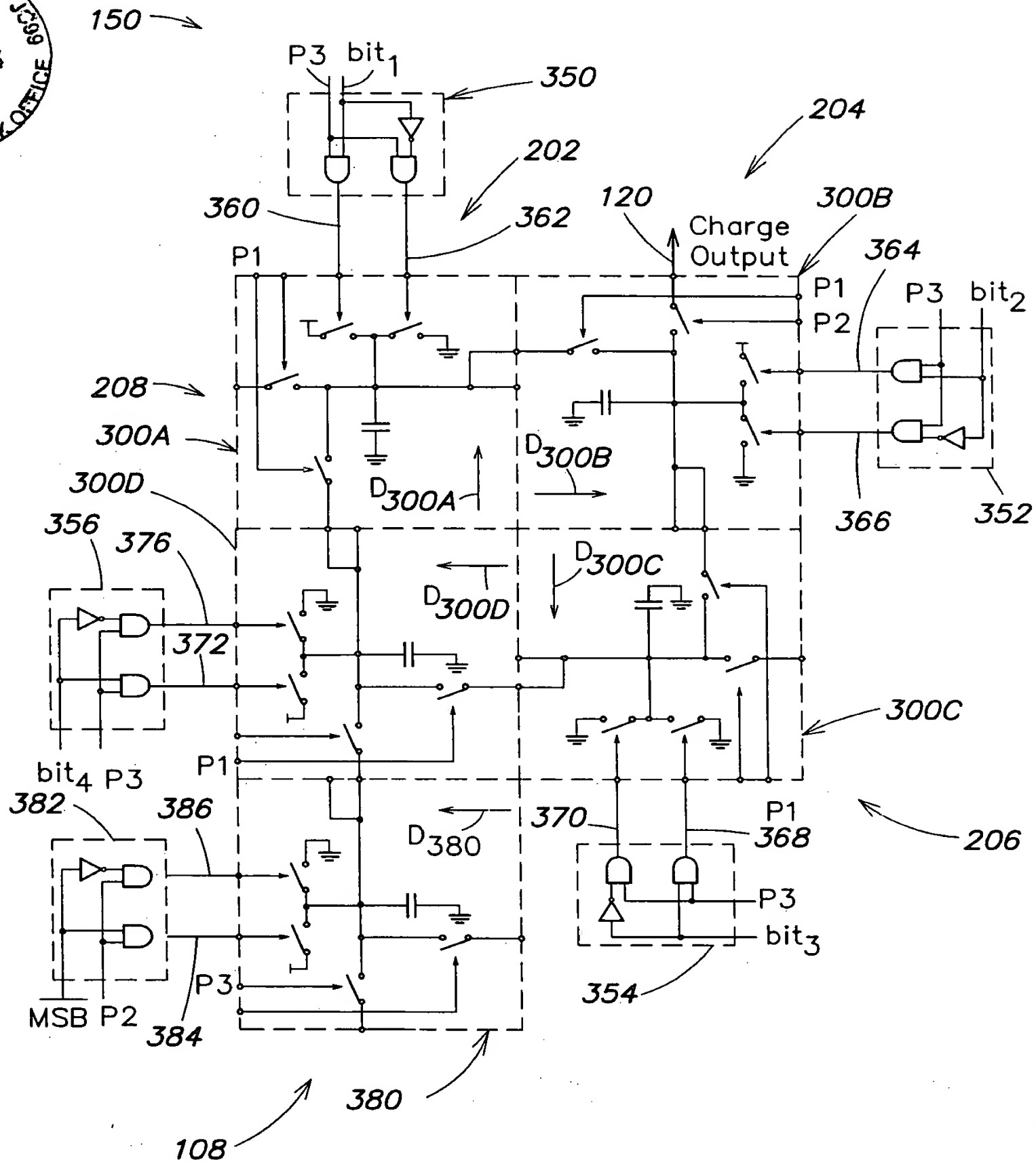


FIG. 21

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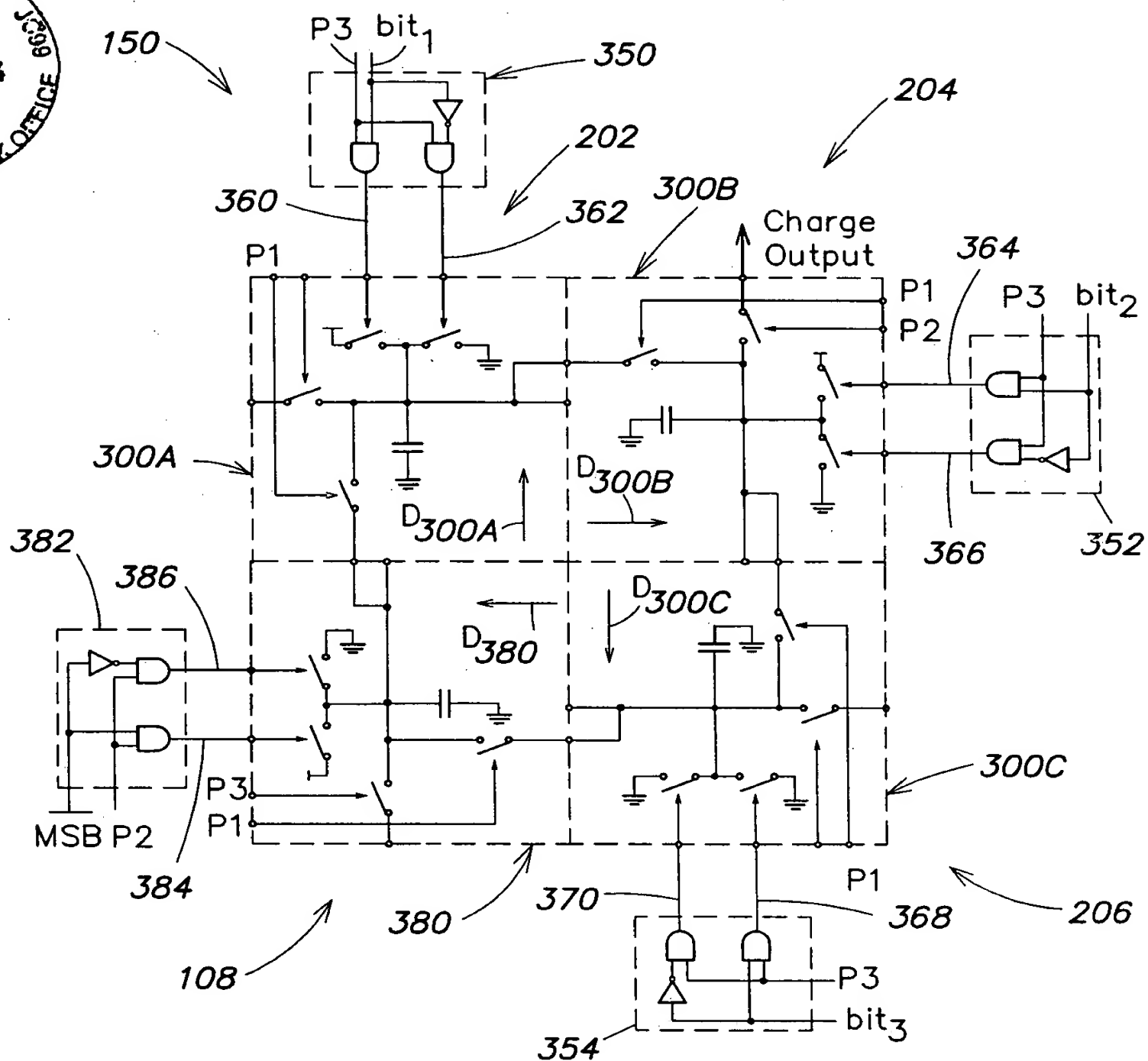
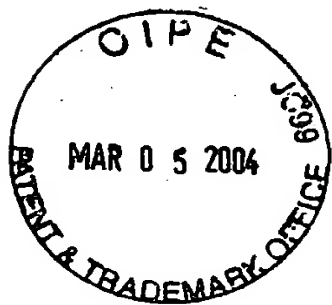


FIG. 22

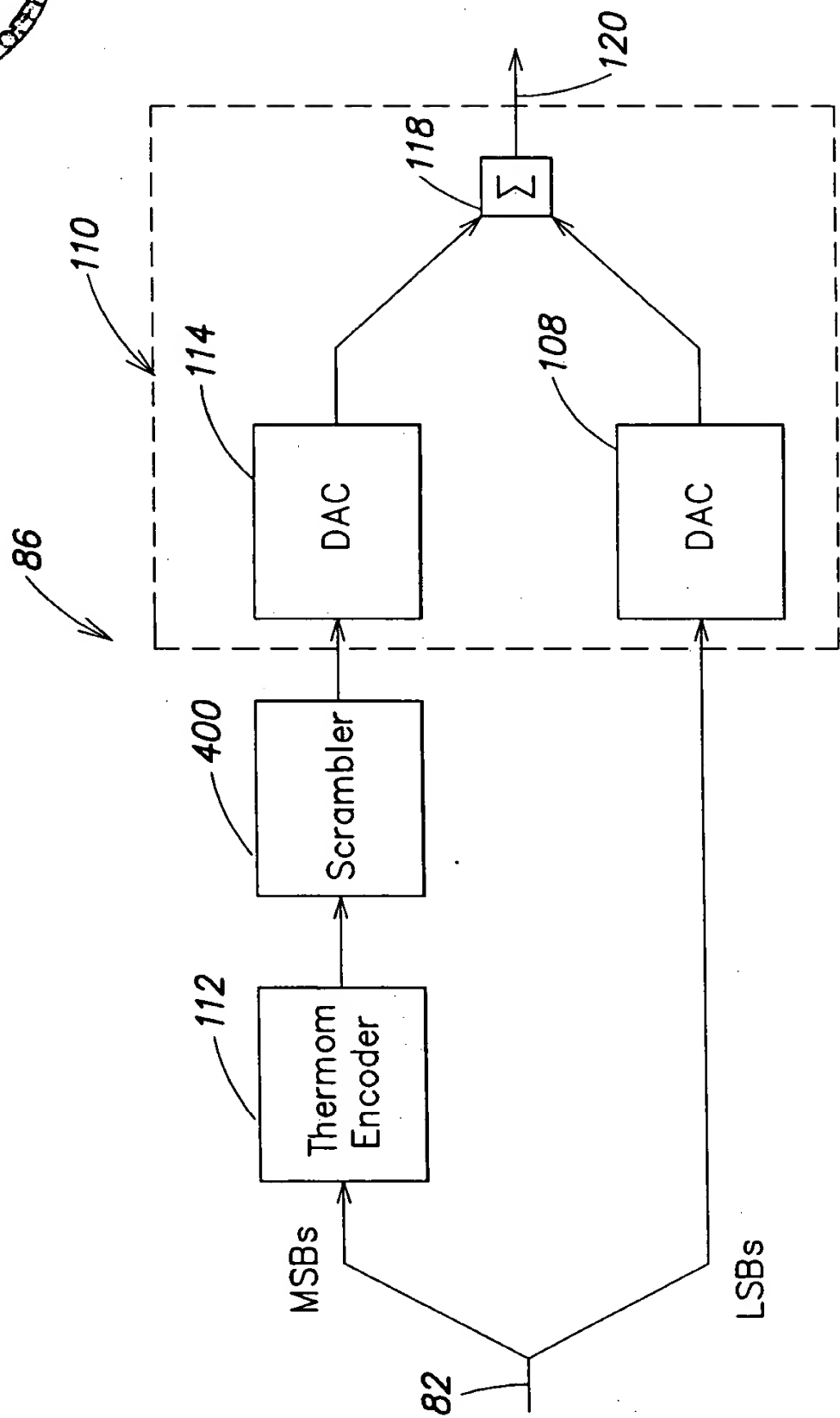
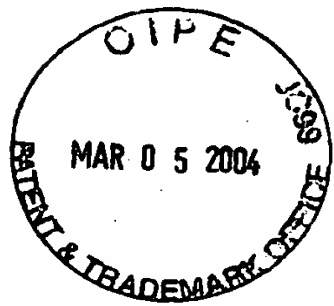
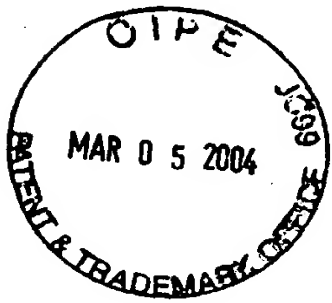


FIG. 23



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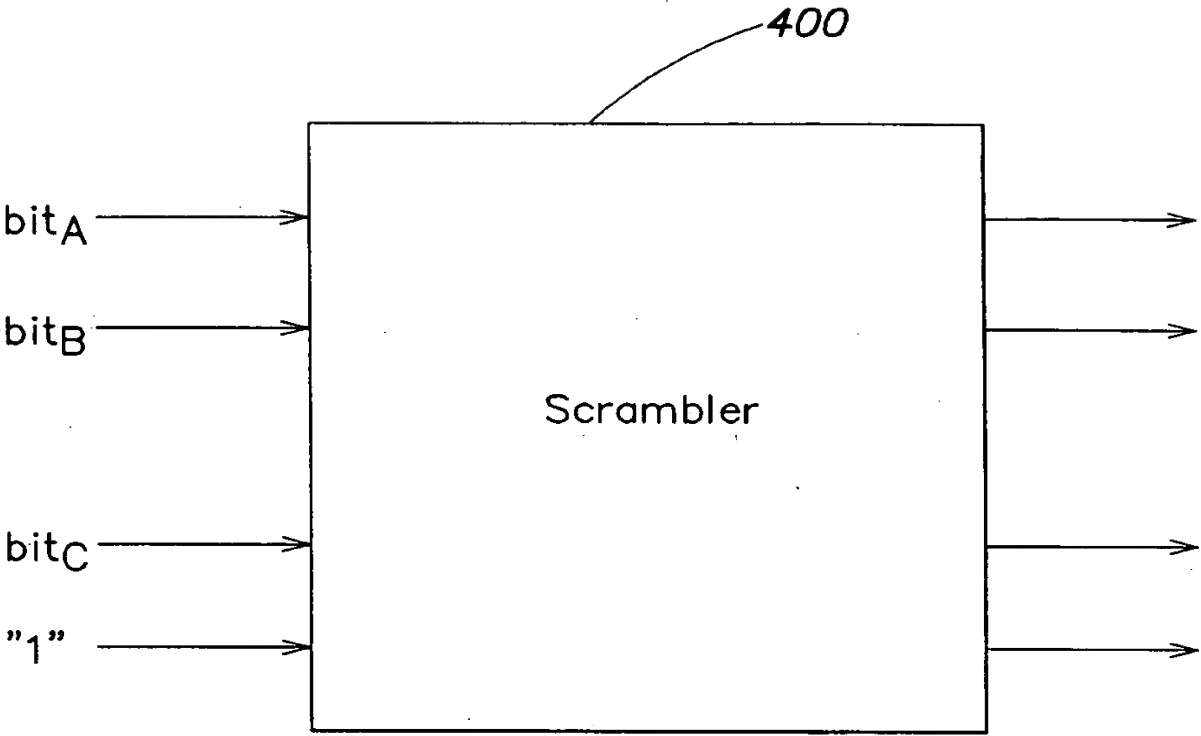


FIG. 24

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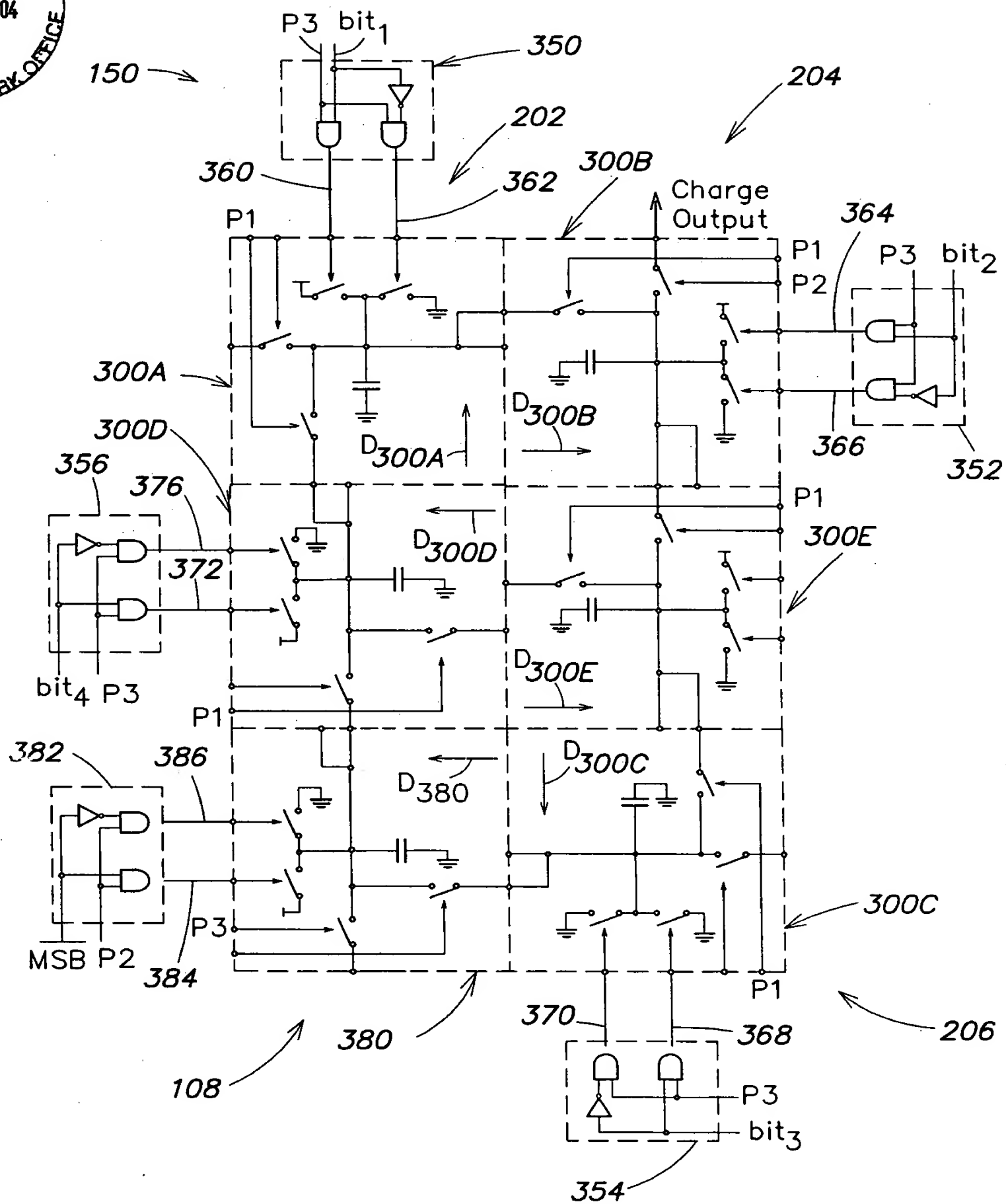
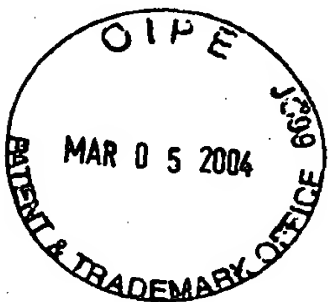


FIG. 25



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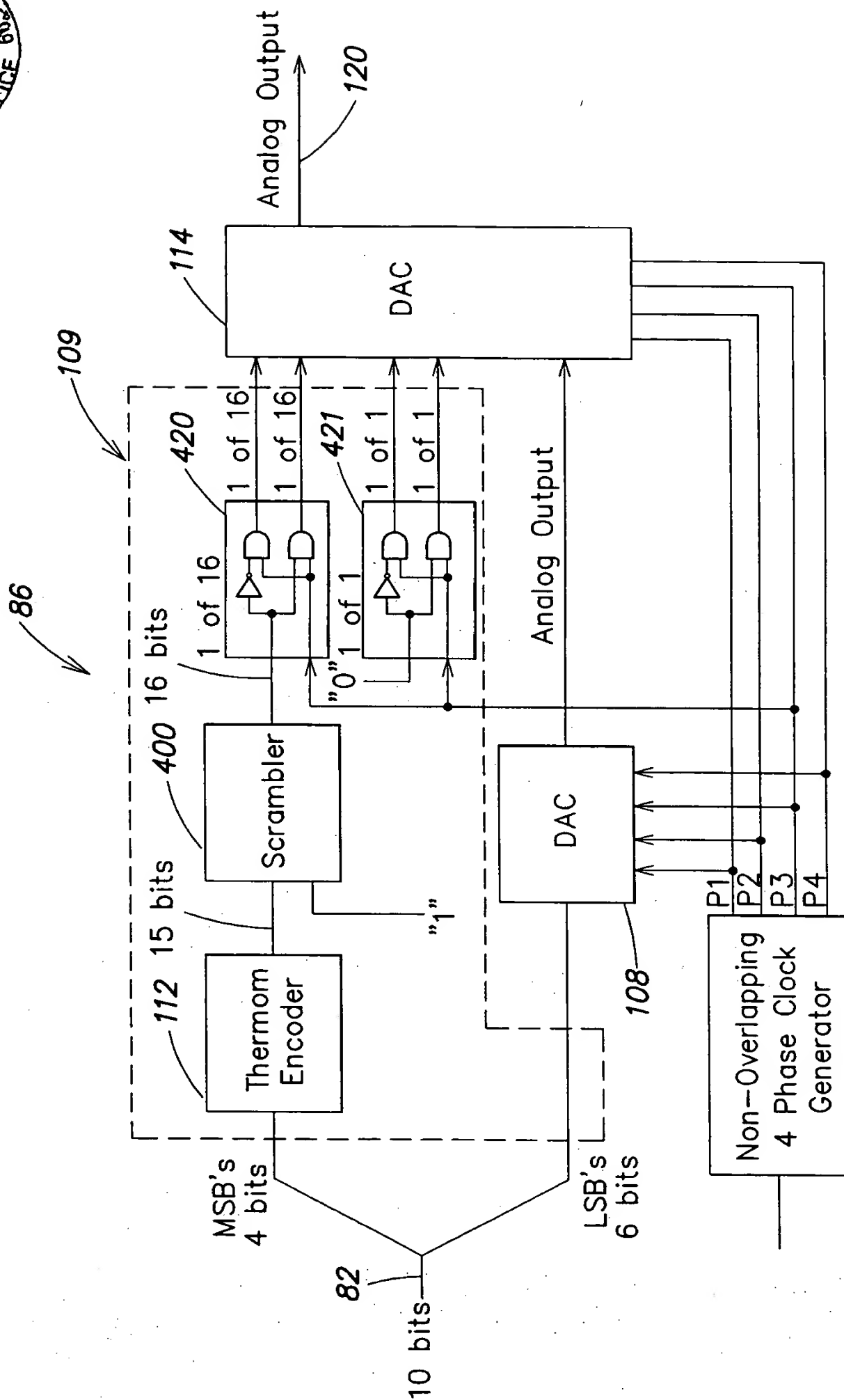
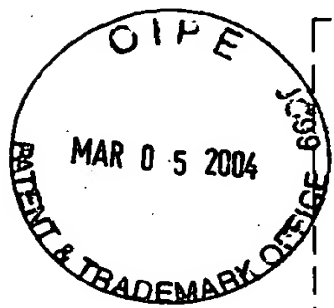


FIG. 26



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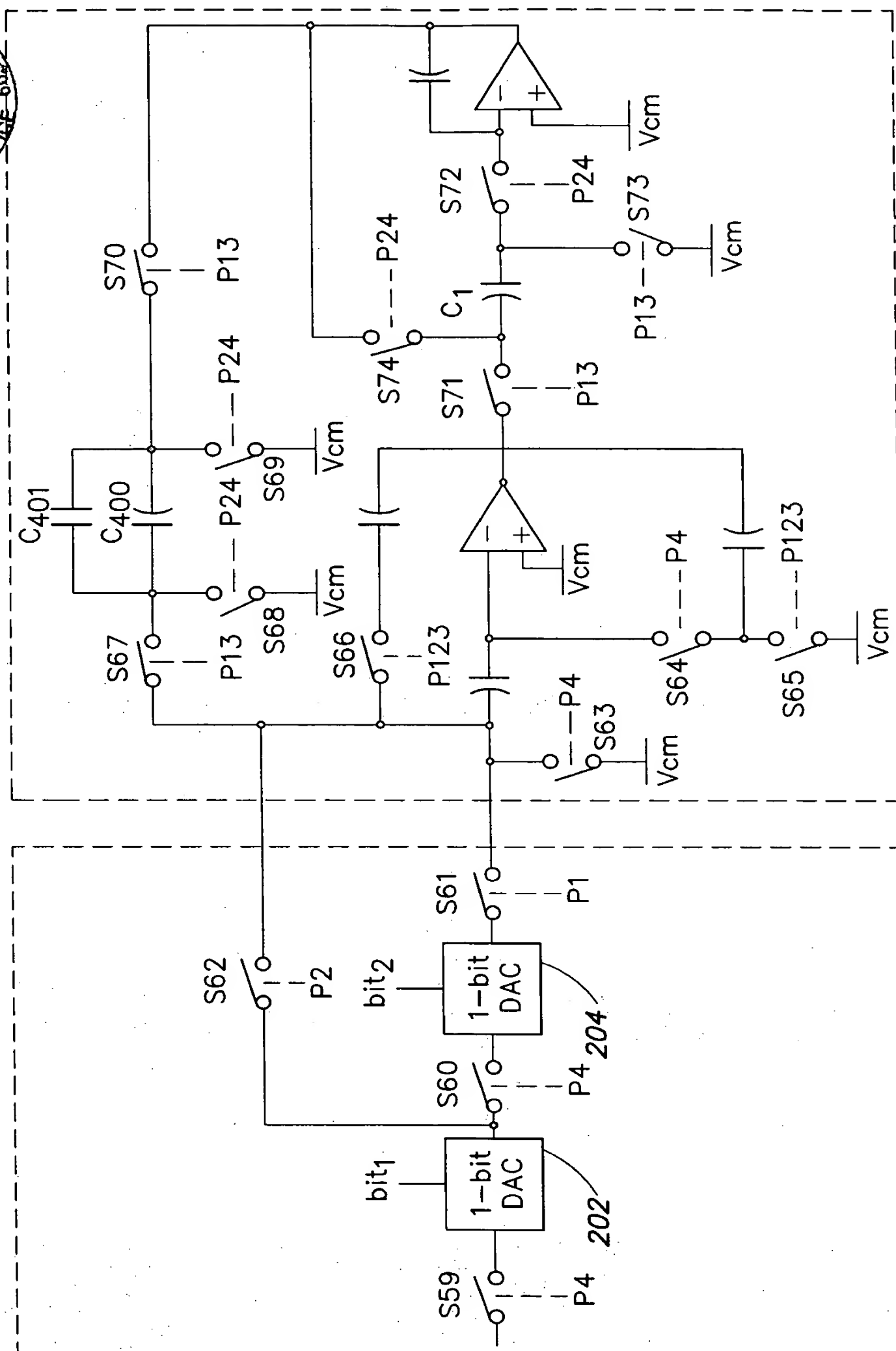


FIG. 27

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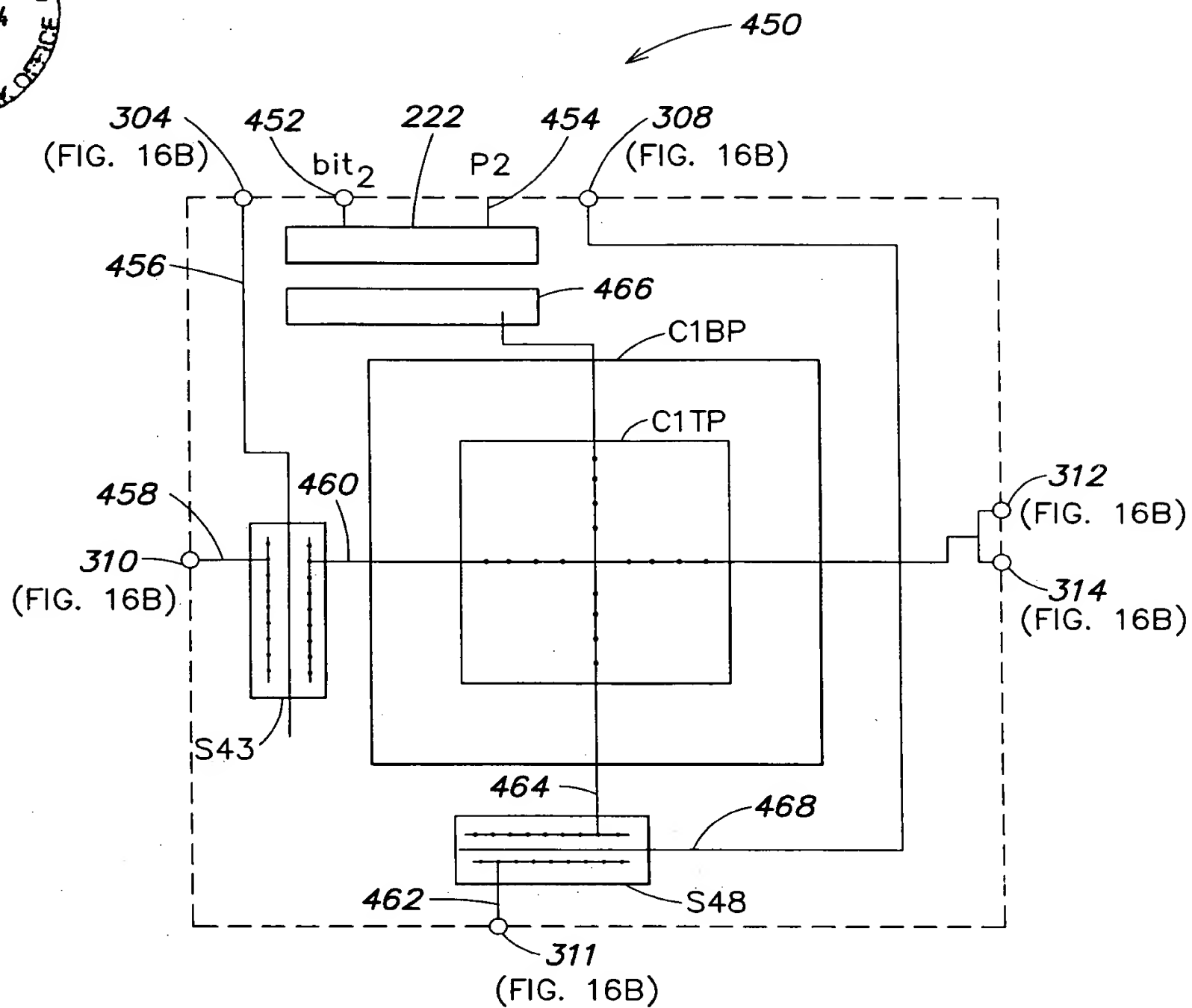
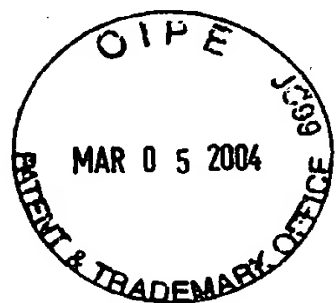


FIG. 28A



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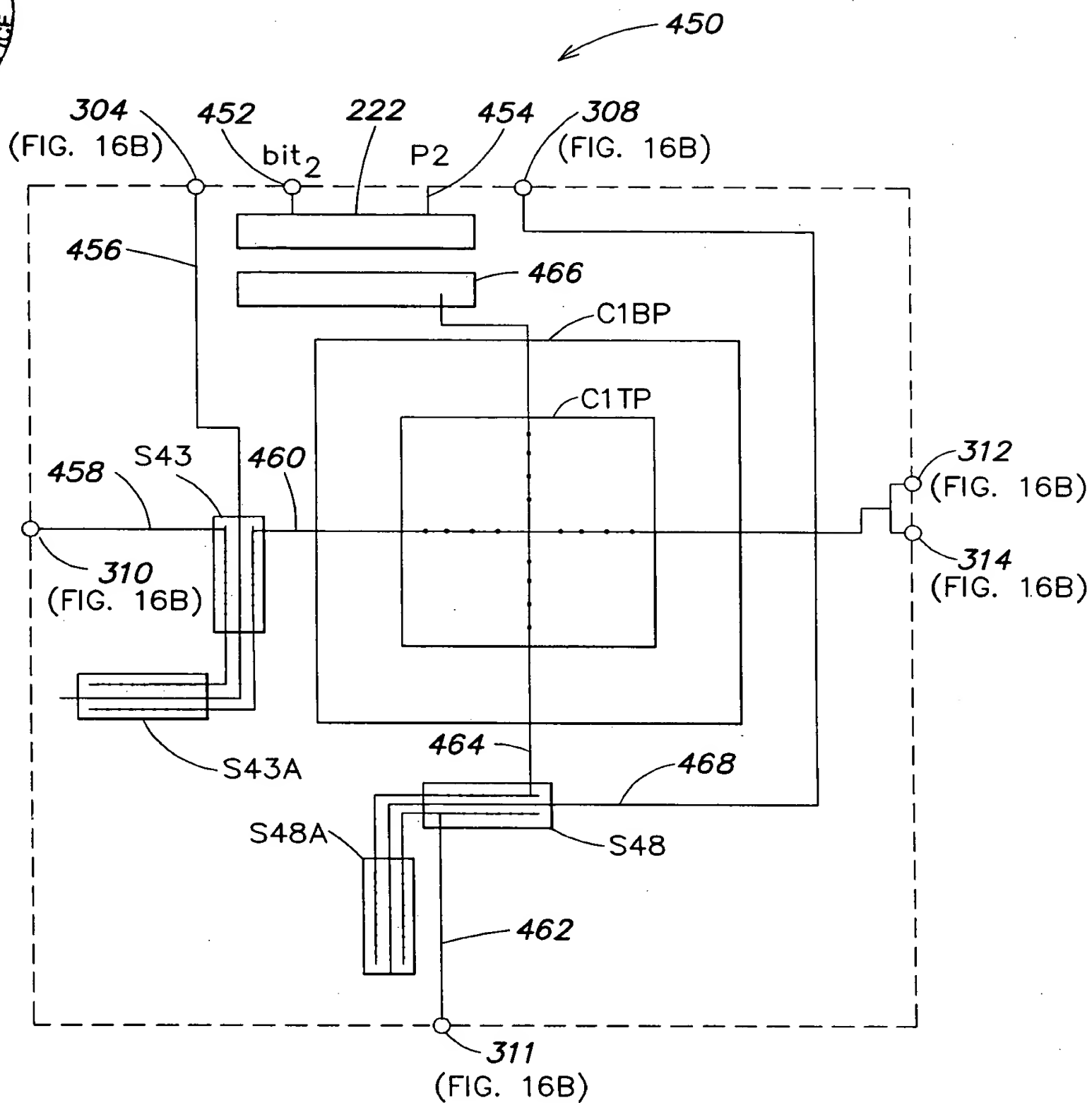


FIG. 28B



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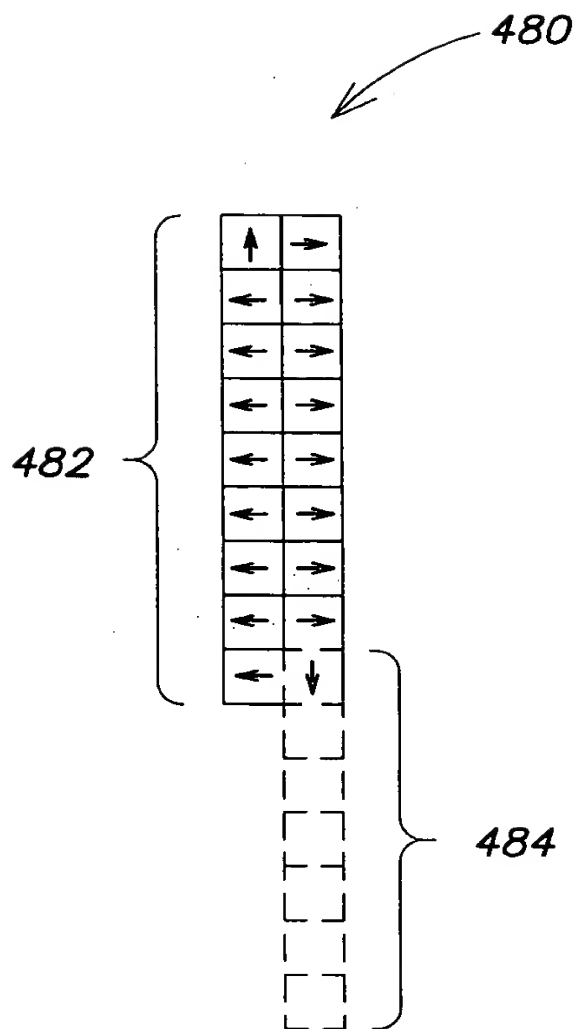
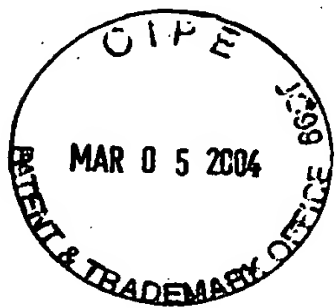


FIG. 29



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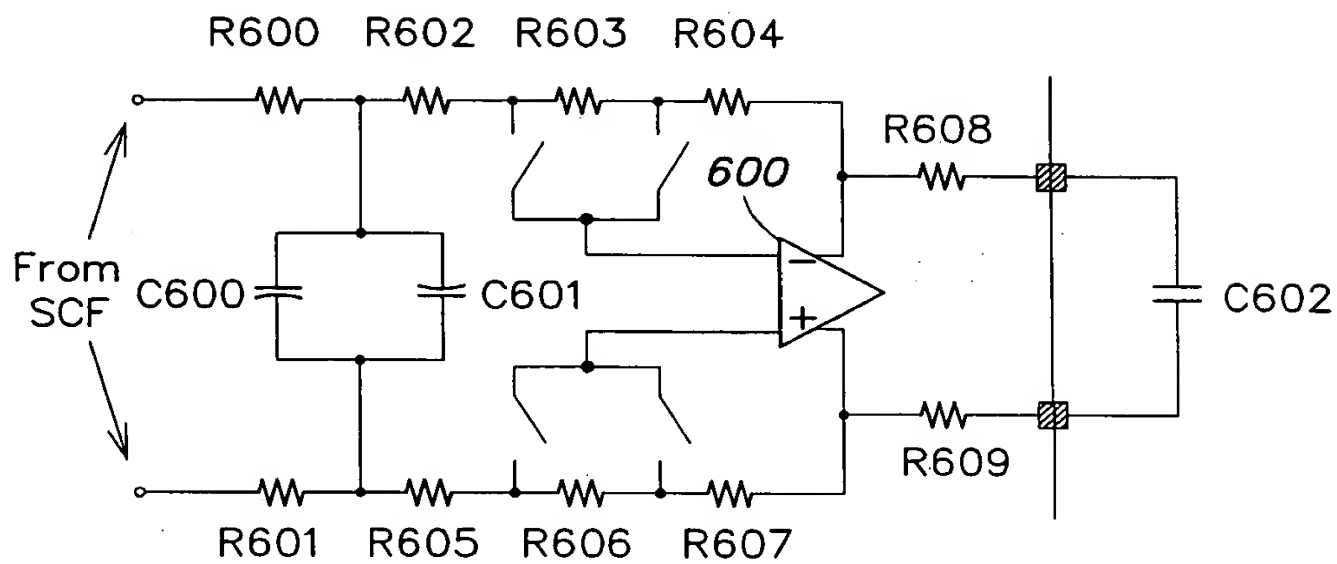


FIG. 30

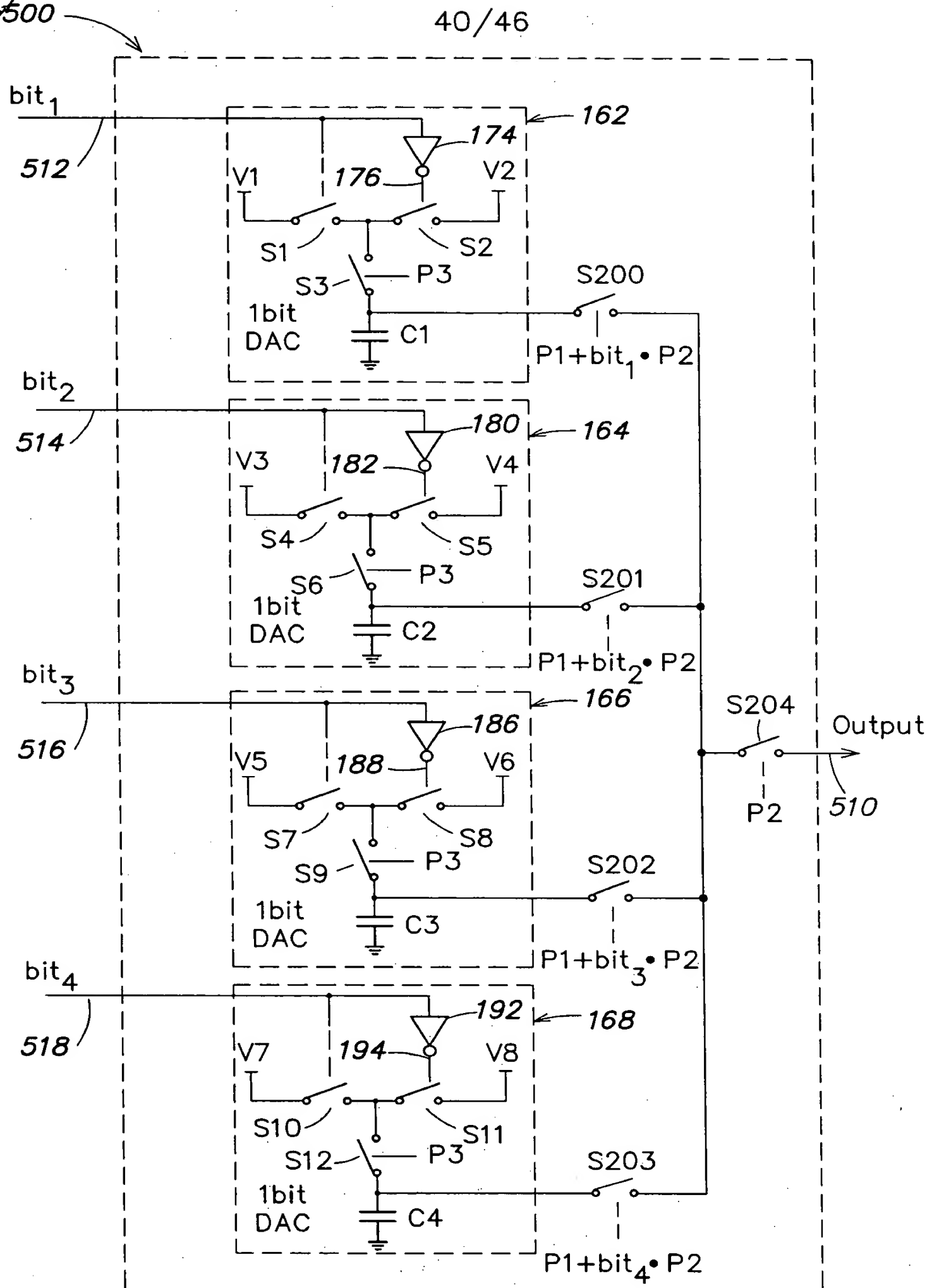
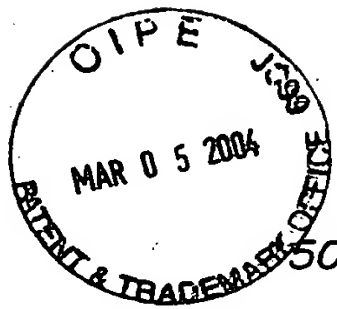


FIG. 31

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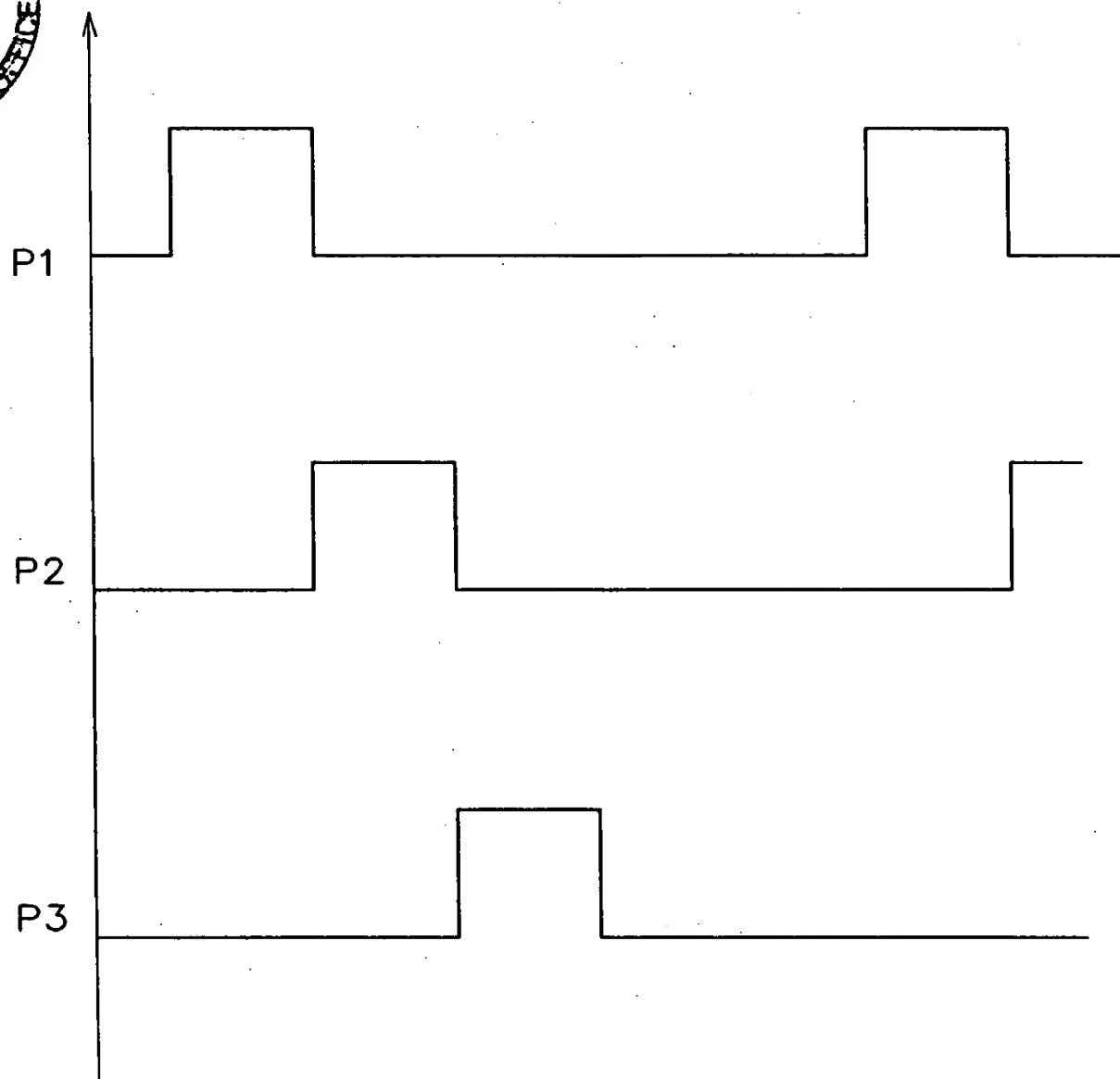
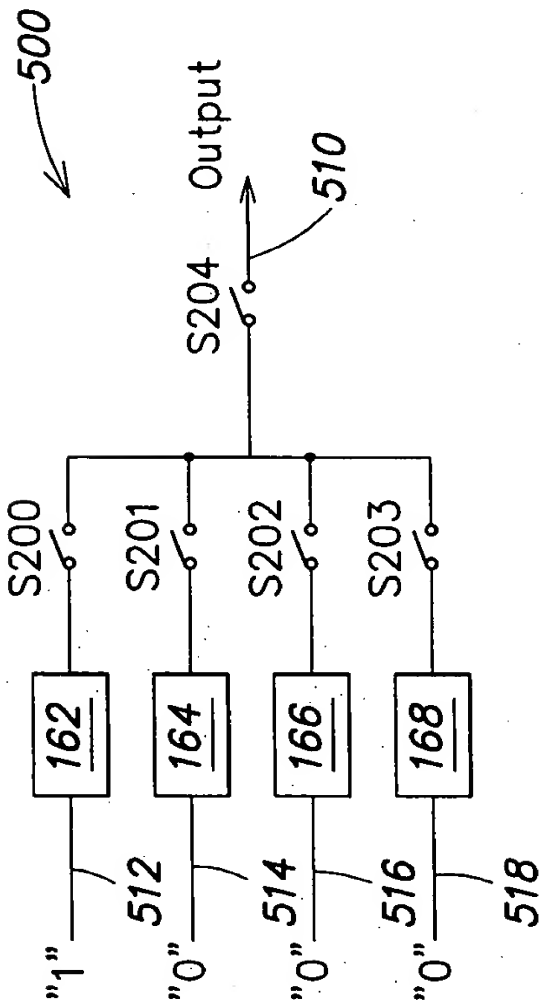
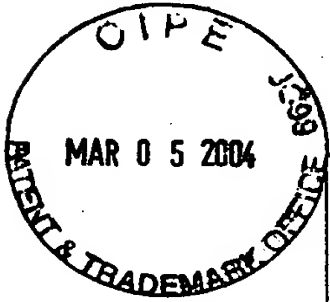
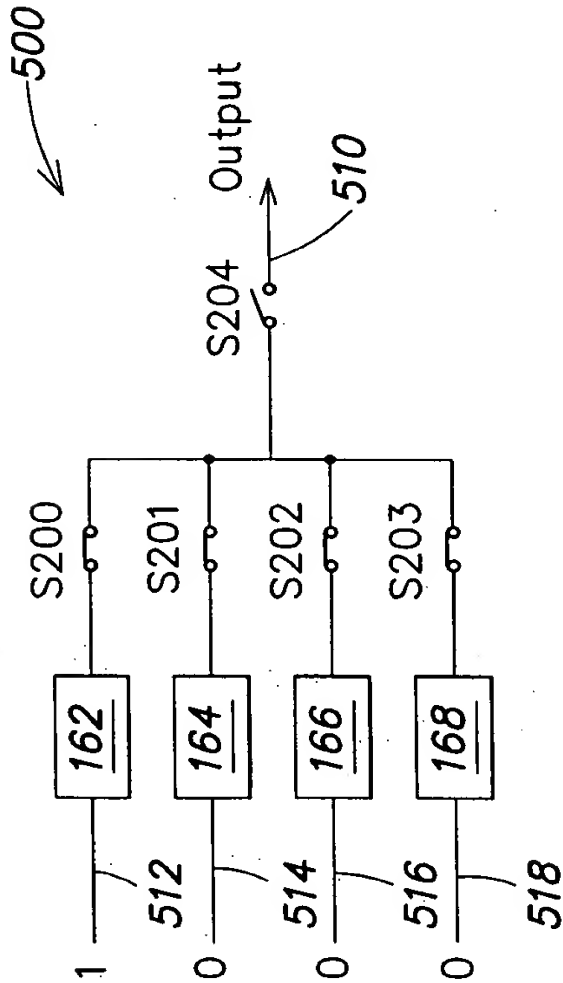


FIG. 32



| | | |
|--------|-------------------|---------------------------|
| P1="0" | $V(C1) = V_{ref}$ | $Q(C1) = C \cdot V_{ref}$ |
| P2="0" | $V(C2) = 0$ | $Q(C2) = 0$ |
| P3="1" | $V(C3) = 0$ | $Q(C3) = 0$ |
| | $V(C4) = 0$ | $Q(C4) = 0$ |

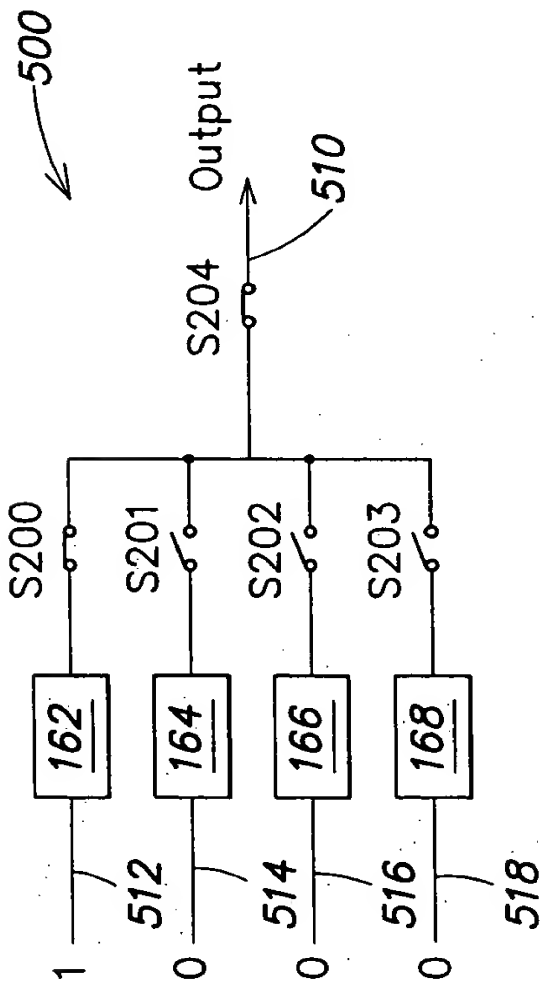
FIG. 33A



| | | |
|--------|---------------------|-----------------------------|
| P1="1" | $V(C1) = V_{ref}/4$ | $Q(C1) = C \cdot V_{ref}/4$ |
| P2="0" | $V(C2) = V_{ref}/4$ | $Q(C2) = C \cdot V_{ref}/4$ |
| P3="0" | $V(C3) = V_{ref}/4$ | $Q(C3) = C \cdot V_{ref}/4$ |
| | $V(C4) = V_{ref}/4$ | $Q(C4) = C \cdot V_{ref}/4$ |

Q delivered to
output terminal
is $Q(C1) = C \cdot V_{ref}/4$

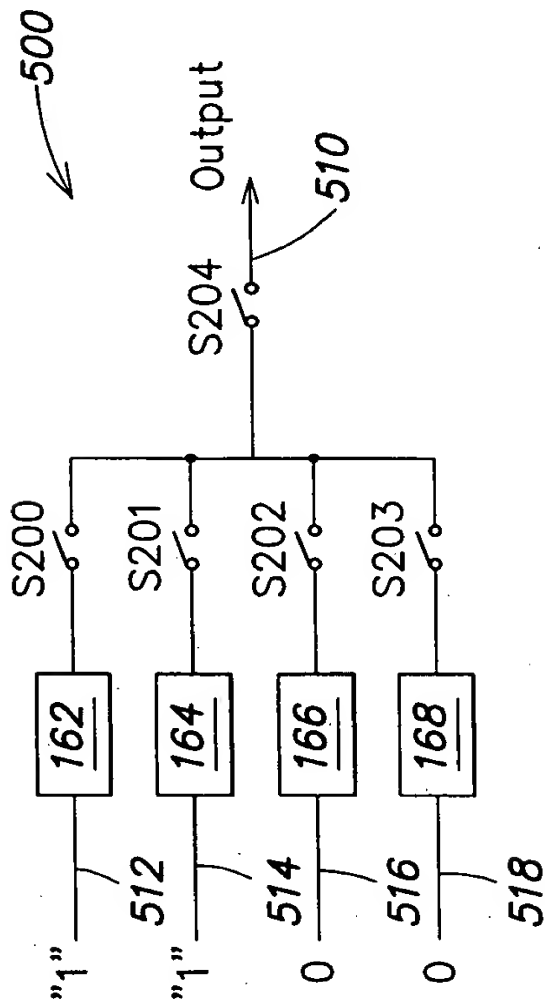
FIG. 33B



| | | |
|--------|-------------------|---------------------|
| P1="0" | $V(C1)=V_{ref}/4$ | $Q(C1)=C*V_{ref}/4$ |
| P2="1" | $V(C2)=V_{ref}/4$ | $Q(C2)=C*V_{ref}/4$ |
| P3="0" | $V(C3)=V_{ref}/4$ | $Q(C3)=C*V_{ref}/4$ |
| | $V(C4)=V_{ref}/4$ | $Q(C4)=C*V_{ref}/4$ |

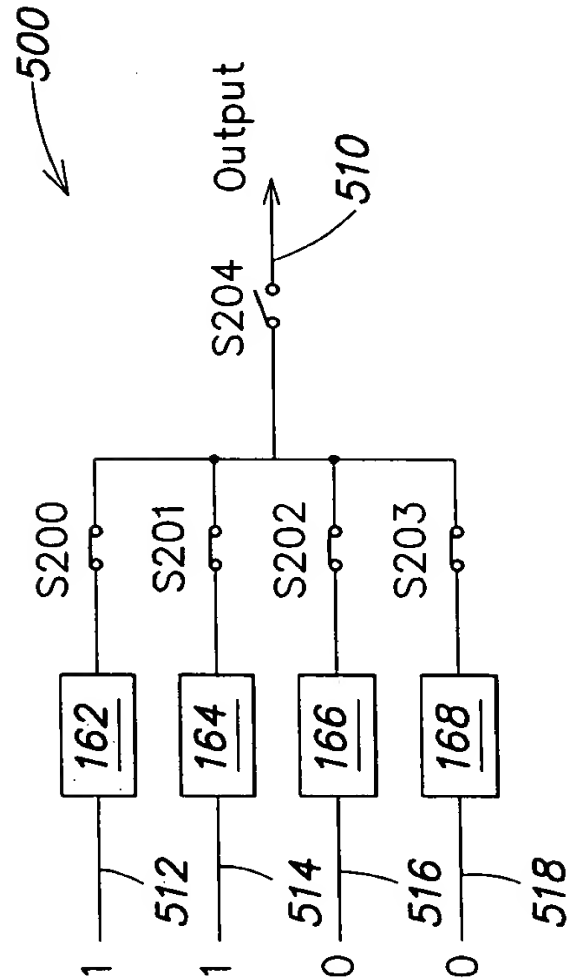
Q delivered to
output terminal
is $Q(C1)=C*V_{ref}/4$

FIG. 33C



| | | |
|----------|-------------------|---------------------------|
| P1 = "0" | $V(C1) = V_{ref}$ | $Q(C1) = C \cdot V_{ref}$ |
| P2 = "0" | $V(C2) = V_{ref}$ | $Q(C2) = C \cdot V_{ref}$ |
| P3 = "1" | $V(C3) = 0$ | $Q(C3) = 0$ |
| | $V(C4) = 0$ | $Q(C4) = 0$ |

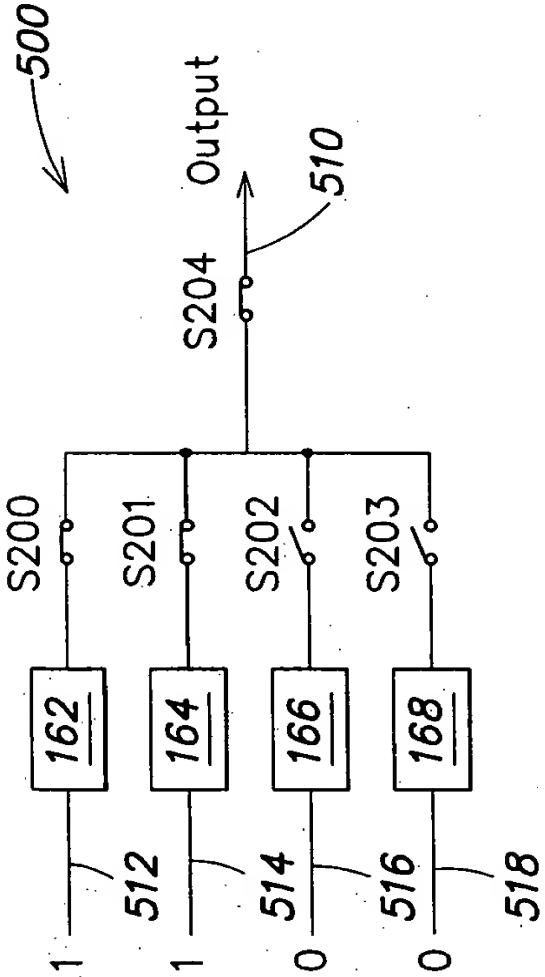
FIG. 34A



| | | |
|----------|---------------------|---------------------|
| P1 = "1" | $V(C1) = V_{ref}/2$ | $Q(C1) = V_{ref}/2$ |
| P2 = "0" | $V(C2) = V_{ref}/2$ | $Q(C2) = V_{ref}/2$ |
| P3 = "0" | $V(C3) = V_{ref}/2$ | $Q(C3) = V_{ref}/2$ |
| | $V(C4) = V_{ref}/2$ | $Q(C4) = V_{ref}/2$ |

Q delivered to output terminal
is $Q(C1) + Q(C2) = C \cdot V_{ref}/2 + C \cdot V_{ref}/2 = C \cdot V_{ref}$

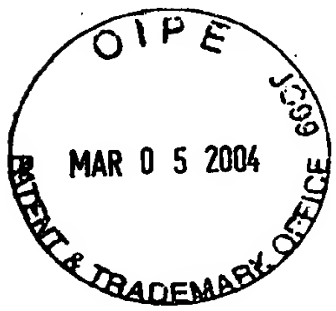
FIG. 34B



| | | |
|----------|---------------------|---------------------|
| P1 = "0" | $V(C1) = V_{ref}/2$ | $Q(C1) = V_{ref}/2$ |
| P2 = "1" | $V(C2) = V_{ref}/2$ | $Q(C2) = V_{ref}/2$ |
| P3 = "0" | $V(C3) = V_{ref}/2$ | $Q(C3) = V_{ref}/2$ |
| | $V(C4) = V_{ref}/2$ | $Q(C4) = V_{ref}/2$ |

Q delivered to output terminal
is $Q(C1) + Q(C2) = C \cdot V_{ref}/2 + C \cdot V_{ref}/2 = C \cdot V_{ref}$

FIG. 34C



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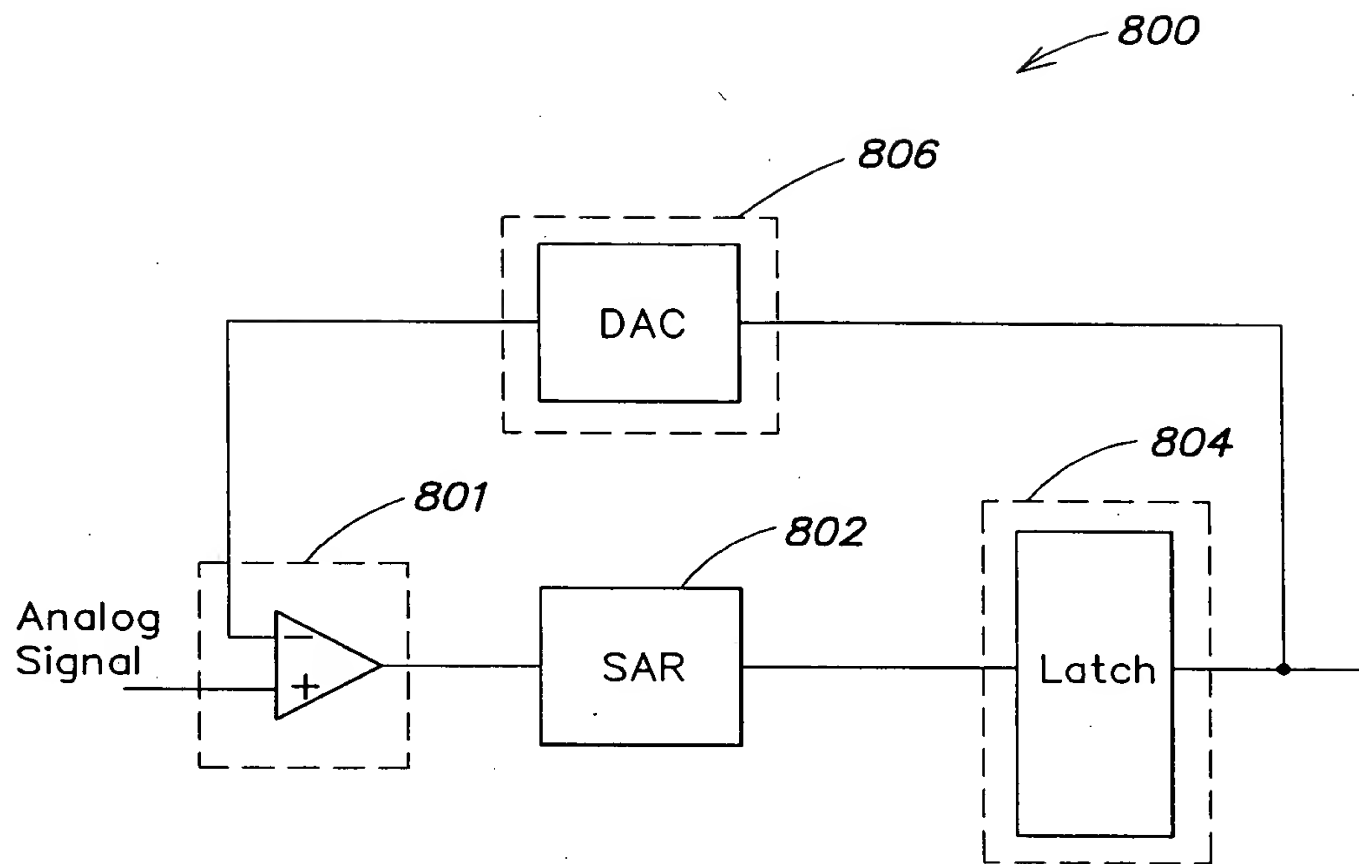


FIG. 35